MIT COMMENCEMENT 20 23

# MIT Commencement

Honoring the graduates of 2023

Thursday, June 1, 2023

Massachusetts Institute of Technology



# WELCOME

The Class of 2023 will join a great, global family of nearly 145,000 MIT alumni. Connected by shared experiences, our community is knit together by fundamental values and ideals: Excellence and curiosity. Openness and integrity. Creativity and boldness. A passion for solving tough problems. And a collective drive to use our strengths wisely to serve humanity.

Our new graduates will help create the future of our society—and our planet. But before they get started, we are delighted to join their families and friends in honoring their accomplishments at MIT.

Congratulations, Class of 2023!

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Sally Kornbluth President

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Photos Above: Christopher Harting Cover: Gretchen Ertl Back cover: Andy Ryan

# COMMENCEMENT 2023

# SCHOOL OF ARCHITECTURE AND PLANNING

# Bachelor of Science in Architecture Course IV Department of Architecture

Natasha K. Hirt Also with a Major in Course XI (See also M.Eng., Course I-P)

#### Karla Marcela Tamez

Michael J. Tan Minor in Japanese

Isabel Margaret Waitz

# Bachelor of Science in Art and Design Course IV-B Department of Architecture

Audrey Gatta Also with a Major in Course XIV-2 Minor in Spanish

#### Felix Li

Karyn A. Nakamura

**Jenny Zhang** Minor in Computer Science

# **Bachelor of Science in Planning**

Course XI Department of Urban Studies and Planning

Melissa D. Hill Also with a Major in Course XV-1

# Trinity Jet Stallins

Also with a Major in Course II-A Minor in Environment and Sustainability

Eva A. Then

# Bachelor of Science in Urban Science and Planning with Computer Science Course XI-6 Department of Urban Studies and Planning in conjunction with the Schwarzman College of Computing

**Gabriel Carlo Alonzo Barrett** Minor in Spanish

**Amelia Lee Doğan** Also with a Major in Course XXI

Meera A. B. Gregerson (February, 2023)

# Keili Alana Tucker

# SCHOOL OF ENGINEERING

Bachelor of Science in Engineering as recommended by the Department of Civil and Environmental Engineering Course 1-ENG Department of Civil and Environmental Engineering

Aliai Dhol Acuil Minor in Anthropology (February, 2023)

**Dylan E. Brooks** Also with a Major in Course VI-1 Minor in Public Policy (February, 2023)

Vivian Cheng Minor in Computer Science

**Emily Gao Fang** Also with a Major in Course XI

**Ava Vittoria Gillikin** Minor in Management

**Simone Sive Lassar** Minor in Design (February, 2023)

Juliet Noriko Liao Minor in Computer Science

**Catherine Suet-Ching Lu** Minor in Computer Science

**Emily Streiff** Minor in Mathematics (February, 2023)

Karissa Jane Wenger Minor in Spanish (See also M.Eng., Course I-P)

Eric L. Wooten

# Bachelor of Science in Mechanical Engineering

Course II Department of Mechanical Engineering

Layal Barakat Minor in Design (February, 2023)

Michael J. Burgess, Jr.

Joshua A. Butler

Victor Arturo Diaz

Max Fan

Marcelo García

Levi S. Gershon (February, 2023)

Miller E. Geschke Minor in Energy Studies (February, 2023)

**Delaney Kathleen Goetz** 

David E. Hernandez

Jessica N. Horowitz Minor in Environment and Sustainability Minor in Energy Studies (February, 2023)

#### Lambert Hu

#### Delace Linghui Jia

**Rishi Tarun Kommalapati** Minor in Comparative Media Studies

#### Cong Li

**Yong Jie Lin** Minor in Environment and Sustainability

**Oliver Philip MacNeely** (September, 2022) Nina M. Morch Minor in Theater Arts

Andrew J. Motz Minor in Music Minor in Biomedical Engineering

Megan Diễm-Thùy Ngo Minor in Computer Science

Joshua Noguera

Benjamin J. Owen-Block

Frank J. Ozello III

**Christina M. Patterson** Also with a Major in Course XXI-M

Victor Paul Portmann

Jonhenry W. Poss

**Theodore Joseph Rizo** (February, 2023)

Joshua Samuel Rohrbaugh

**Emma K. Rutherford** Also with a Major in Course VIII Minor in Computer Science Minor in Design

# Enya Ryu

**Emily A. Scherer** 

Laura A. Schwendeman Minor in Biomedical Engineering

**Carl Andrew Seelhoff** Minor in Statistics and Data Science (February, 2023)

Henry F. Sobieszczyk

John B. Thomas (February, 2023)

Kyle B. Thompson

Valeriia V. Tyshchenko

2 School of Engineering

Gabriella E. Ulloa

Kiet Vu

Sylvia Elise Waft

**Carolina S. Warneryd** Minor in Computer Science

**Benjamin Thomas Weizer** 

Christian D. Williams (February, 2023)

Luke H. Woodcock

Yufei Wu Minor in Theater Arts

# Bachelor of Science in Engineering as recommended by the Department of Mechanical Engineering

Course II-A Department of Mechanical Engineering

Amanda Shayna Ahteck

Aljazzy Alahmadi

**Pablo Alejo-Aguirre** Minor in Theater Arts

**Danielle Nicole-Mako Allison** Minor in Music

#### Jordan Ambrosio

**Toluwalase Jennifer Asade** Also with a Major in Course XXI-M

#### **Eduardo Cuauhtémoc Barrios**

Maheera Bawa Minor in Computer Science

Jolie Sonia Bercow

Quinn N. Bowers

**Caralyn Joy Briggs** 

Natalie Amelia Cardenas

**Christina Chen** Minor in Management

Doreen L. Chin (February, 2023)

**Trevor D. Ching** Minor in Design

Oliver Han Chinn

**Jinger Sia Chong** Minor in Chinese Minor in Computer Science

#### Kwame S. Connell

Douglas D. Coughran IV

Christian J. de Weck Minor in German

**Ambre E. Decilap** Minor in Computer Science

Daymé Delgado (February, 2023)

Sophia Morgan Sakamoto DiSabato

Chibuzor I. Eduzor (September, 2022)

#### Tess M. Engst-Mansilla

#### Rafael de Brito Lemes Fernandes

Katana Rain Finlason Minor in Energy Studies

#### Paige O. Forester

Hannah Brielle Gazdus Also with a Major in Course XXI-W

Samuel John Gozelski (February, 2023)

**Juliana Ceppas Green** Also with a Major in Course IV-B

Anna Y. Haddad

Sabrina Belén Hare Minor in Design

Diane Heinle

Steven Herrera

**Evan E. Hostetler** Minor in Design (February, 2023)

May J. Huang

Luis C. Ibarra

Matthew J. Jens

Mulan Jiang Minor in Spanish

Andrew P. Johnson Minor in Computer Science

Stephanie M. Khaguli

Magnus-Tryggvi Adejogun Kosoko-Thoroddsen

**Sophia Alexis Leon Guerrero** Also with a Major in Course XV-1

Diane Y. Li Minor in Energy Studies (February, 2023)

Lillian A. Linden

**Carly Erin Long** 

Sophie Y. Longawa

**Joshua Paul Maldonado** (February, 2023)

John Cyril Malloy IV Minor in Finance

Morgan Parker Mayborne Minor in Political Science

Devin C. McCabe

**Chad Arthur Meier** 

Anna Josephine Meurer Minor in Entrepreneurship & Innovation Minor in Anthropology

Andrea Montserratt Moncada Minor in Management

Joseph M. Ntaimo

Andrew T. Palleiko Minor in Computer Science

Seohyoung Park Minor in Business Analytics

**Olivia L. Parsons** Minor in Management (February, 2023)

#### Logan Kai Long Paterson

**Yuka M. Perera** Minor in Management Minor in Energy Studies

Christopher J. Perrino

Kassidy Iris Peterson (February, 2023)

William D. Reinkensmeyer

Viviana Rivera Martínez

Jacob A. Rodriguez Minor in History

Jesus Andres Rodriguez Minor in Management

Ronak Roy Also with a Major in Course VI-1

Nicholas A. Saavedra (February, 2023)

Ahmad A. Salman

Jason M. Salmon

Kaira M. Samuel

Jared Edward Scott Minor in Computer Science Peter N. Scott Minor in Energy Studies

Kenan Hayel Sehnawi

Nicole M. Seman

**Dylan Keith Patrick Sequeira** 

Sharmi M. Shah

Aquila V. Simmons Also with a Major in Course XXI-M

Kiely M. Smiga-McManus (February, 2023)

#### Mariia Smyk

**Joshua Chanyoung Sohn** Also with a Major in Course VI-2

Sophia D. Sonnert Minor in German

**Bryan C. Sperry** Also with a Major in Course VIII

Yushan Su

Emma Salome Suh

Sandra J. Villagrana

**Christian Eduardo Viteri** Minor in Literature

Kristopher Loi Vu

**Taimor M. Williams** Minor in Economics

Jack W. Yurkanin

Leonardo O. Zamora Yanez

Adam Redmond Zimmermann

# Bachelor of Science in Materials Science and Engineering Course III

Department of Materials Science and Engineering

Sergio A. Arenas Hernández Minor in Mathematics Minor in Archeology and Materials

Ningxin Chen Minor in Architecture

Sara Vanessa Fernandez Minor in Entrepreneurship & Innovation Minor in Chinese

**Priya Ganesh** Minor in Computer Science

**Perapat Pete Gatenil** Minor in Mechanical Engineering

**Eyosias Adanegn Gebremeskel** Also with a Major in Course VI-2

Josh A. Glass

Carolina Gutierrez

Amena Khatun Minor in Environment and Sustainability Minor in Biomedical Engineering

Steven H. Ngo (February, 2023)

Sherrie X. Qian Minor in Chemistry Minor in Polymers and Soft Matter

Samuel William Song Minor in Computer Science

Bachelor of Science as recommended by the Department of Materials Science and Engineering Course III-A Department of Materials Science and Engineering

Wesley Wade Block (February, 2023)

4 School of Engineering

Tess R. Buchanan Minor in Urban Studies and Planning

Shane J. Campbell

Eryn N. Cornelius

Dennis D. Gastel

Katherine Q. Guo Also with a Major in Course IV-B

Helen Hu

**Arina D. Khotimsky** Minor in French Minor in Energy Studies

Sheikh R. Mahmud Minor in Computer Science

**Nyssa Raquel Miller** Minor in Theater Arts

Gabrielle Ogata

Jocelyn Han Ting (February, 2023)

# **Bachelor of Science in Electrical** Science and Engineering

Course VI-1 Department of Electrical Engineering and Computer Science in conjunction with the Schwarzman College of Computing

#### Pedro Leonardo Acosta De León

**Jonas Nathaniel Cameron** Minor in Mechanical Engineering Minor in Economics

Leif Charles Clark Minor in Political Science

Matthew J. Cox Also with a Major in Course XVIII

Liliana B. Edmonds

Roberto E. Garcia (September, 2022) James A. Greer

**Omozusi E. Guobadia** Also with a Major in Course IX

Nicolas M. Hougardy

**Raiphy Jerez** 

Joshua Lim (February, 2023)

**Trinity W. Manuelito** 

Nishat Fahmida Protyasha Also with a Major in Course VIII Minor in Music

#### Nikita Romanov

**Abigail Margaret Shull** Also with a Major in Course VIII

Jade Camille Sund (February, 2023)

Maxwell Tianchen Yun Minor in Comparative Media Studies (February, 2023)

# Bachelor of Science in Electrical Engineering and Computer Science Course VI-2 Department of Electrical

Engineering and Computer Science in conjunction with the Schwarzman College of Computing

**Kojo Anane-Fordjour** Minor in Business Analytics

#### Aklilu T. Aron

Nithya Sri Attaluri (See also M.Eng., Course VI-P)

Shelly Ben-David Minor in Mechanical Engineering

Grace Cai (February, 2023) (See also M.Eng., Course VI-P) Alexander Blake Canepa (February, 2023)

**Trevor Stephen Carter** Also with a Major in Course XXI-L

**Carlos M. Castillo Lozada** (February, 2023)

Rachel H. Chae Minor in Biomedical Engineering

Harshal Chamdal

Anna Leigh Chau

Anika Cheerla

Susanna Chen

Gabriel Cojocaru

**Abraham I. Corea Diaz** Minor in French

Sarah M. Coston

Lucian K. Covarrubias

Kameron S. Dawson

**Keegan Jaymes Deppe** 

Kaustubh Dighe

Jessica H. Ding Also with a Major in Course XVIII

Christopher K. Evagora (February, 2023)

Joseph W. Feld Minor in Mathematics

Annie Z. Feng

#### **Reinaldo Figueroa Parra**

John M. Flynn Also with a Major in Course VIII

Kevin Frans (See also M.Eng., Course VI-P) Portia Tatiana Ashley Gaitskell

Nina R. Gerszberg

**Fiona Jia-Yu Gillespie** Minor in Mechanical Engineering

#### Eric Gonzalez

Jacob A. Hansen Also with a Major in Course IX

Joshua I. Herrera

Marisa D. Hoosen

**Michael Angelo Iglesias** 

Aishah Muhammad Soriano Jones (February, 2023)

**Shreya S. Karpoor** Minor in Entrepreneurship & Innovation

Moulinrouge Fredrick Kaspar

Matthew T. Kearney Also with a Major in Course XXIV-1 (See also M.Eng., Course VI-P)

Hophin W. Kibona

**Pranav Shankar Krishna** Also with a Major in Course XXIV-2

Albert Kwon

Aria Carlyse Kydd Also with a Major in Course XXI-M

Hien M. Le

Seung Min Lee (September, 2022)

Pearl Li

**Cynthia Lin** (February, 2023)

Amber Y. Liu

Kerlina Liu Minor in Writing Monica Q. Liu

**Rachel Jing Liu** 

Mindy F. Long

Michael Lu Minor in Mechanical Engineering

Mufaro Emmanuel Makiwa

Samantha M. Maldonado Also with a Major in Course XVII

Braulio Martinez-Silva

**Catherine Mei** Also with a Major in Course IX

Katherine Grace Mohr

Neelambar Mondal

Joseph P. Morales

Erastus M. Murungi

James A. Nguyen

Hao Ni

Alexandra C. Nwigwe Minor in Design

Raveen Nzilani (February, 2023)

Armando D. Oliver Minor in Economics

Rafael E. Olivera-Cintrón Minor in Mechanical Engineering Minor in Urban Studies and Planning

Anthony C. Ou Also with a Major in Course VIII Minor in Mathematics

Aiden F. Padilla

Kristen E. Palmer Minor in Chinese

**Ritik Patnaik** 

#### **Elaine Pham**

John Robert Poliniak

Kevin Qian

Noah B. Raby

Nathan Ramesh Also with a Major in Course II

Rachel L. Raybuck Minor in Earth, Atmospheric, and Planetary Sciences

**Daniel Thomas Saavedra** 

Olivia A. Schirm

Spencer J. N. Shroff

Olivia Carolina Siegel

Meenakshi Singh

Anjali Sinha

Lejla Skelic

**Emily Rosmery Sologuren** 

Andrei George Spiride

Alexandre Sarkis Studer

Brady Michael Sullivan Minor in Mechanical Engineering

Ahmad W. Taka Minor in Physics

Grace Wen-Lian Tang (See also M.Eng., Course VI-P)

**Toomas Tennisberg** 

Cem Arda Tepe

Irene Elisabeth Terpstra

Muhammed Suleman S. Thaniana

6 School of Engineering

Shreya R. Thipireddy (February, 2023)

**Tiffany Vu Tran** Minor in Mechanical Engineering

**Miguel A. Tulla Lizardi** Also with a Major in Course VIII

#### Sophie Van Pelt

**Fabian Adonnis Velasquez** Minor in Political Science

**Justice M. Vidal** Also with a Major in Course VIII Minor in Philosophy

#### Diana Nguyen Voronin

Lacthu Vu

Archer D. Wang Also with a Major in Course VIII

Cindy X. Wang Minor in Chinese

Nieky Wang Minor in Mechanical Engineering

Wei-En Warren Wang Also with a Major in Course VIII

#### Alexander Gabriel Warren

**Ryan J. Wilson** Also with a Major in Course XIV-2

Adrianna Dominika Wojtyna Also with a Major in Course XV-2

Wendy S. Wu Also with a Major in Course XVIII Minor in Biology Minor in Writing

**Izabella L. Zamora** Minor in Biology

Julian Zanders

Jenny Lian Zhang Minor in Mechanical Engineering Jessica J. Zhang Minor in Writing

**Travis J. Ziegler** (See also M.Eng., Course VI-P)

Bachelor of Science in<br/>Computer Science and<br/>Engineering<br/>Course VI-3Department of Electrical<br/>Engineering and Computer<br/>Science in conjunction with the<br/>Schwarzman College of Computing

Nishant Abhangi Also with a Major in Course XVIII Minor in Physics Minor in Economics

### Muhammad Ashhad Alam

Ayesha Ali Also with a Major in Course XIV-1

#### Sabiyyah Ali

Kathleen Rose Allden Also with a Major in Course XV-2

Brett Z. Allen (February, 2023)

**Shaden Naif K Alshammari** Also with a Major in Course XVIII

Nicholas C. Anewalt (February, 2023)

Nkenna N. Aniedobe Minor in Statistics and Data Science

#### Ajay Arora

Riya Arora (See also M.Eng., Course VI-P)

#### Anna A. Arpaci-Dusseau

**María Ascanio Aliño** Minor in French (See also M.Eng., Course VI-P)

Angelos Assos

Sebastian Avila (February, 2023)

Kevin E. Awoufack Minor in French

**Isabel Báez Alicea** Minor in Design

**Umang Bansal** Also with a Major in Course XIV-2 Minor in Chinese

#### **Benjamin Leland Bartschi**

George C. Bian Minor in Economics

Sam T. Boshar Also with a Major in Course XVIII Minor in Brain and Cognitive Sciences

#### Jeremiah H. Budiman

**Cathy Cai** Also with a Major in Course XVIII

**Fiona X. Cai** Minor in Mathematics

Miranda J. Cai

Hector M. Carrillo Minor in Mathematics (February, 2023)

Ashley Sima Casden

**Enrique Casillas** 

Luis Yael Castro Polanco

Alvin Chan Also with a Major in Course XV-2

#### Martin Chan

Eileen Xin Yu Chau Minor in Chinese

Victor Chau (February, 2023)

Allen E. Chen Also with a Major in Course XVIII Andrew Chen

Kevin Sun Chen

Peiqi Chen

Robert Charles Chen (February, 2023)

Jisoo Cheong

Sarah X. Chieng

**Shelley Jeeyoo Choi** Also with a Major in Course XV-2

Nicole Cybul

**Bilal Hekmat Daqqah** Also with a Major in Course XV-2

Arman Dave Minor in Mathematics (February, 2023)

Arthur Reiner Ventura De Belen

Jeremiah R. DeGreeff Minor in Mathematics

Zachary R. Deng Also with a Major in Course XVIII

Nisarg K. Dharia Minor in Economics (February, 2023)

Ileana Diaz (September, 2022)

Juan F. Diaz

#### Allen Qian Ding

**Claire Dong** Also with a Major in Course XV-1

#### Samir Droubi

**Cynthia Ke Du** Also with a Major in Course XV-1 (February, 2023)

Juan Sebastián Duitama Cortés

Elvis N. Dyette

**John Michael Eastman** Minor in Japanese

Emily J. Fan

**Dean Fanggohans** Minor in Music (See also M.Eng., Course VI-P)

#### Ashar Farooq

Thomas J. Fisher

Jamie Fu

**Zhi Wei Gan** Also with a Major in Course XVIII

Ixa Gani

Benjamin Gao

**Trinity Gao** Minor in Finance Minor in French

**Andrea L. Garcia** Minor in Mathematics

# Daniel Garcia

Nicholas Gabriel Cwynar Garcia (February, 2023)

Montserrat Garza Also with a Major in Course XXI-M (February, 2023)

# Erick K. Gbordzoe

#### Milto M. Geleta

Kuauhtemoc Salvador Gonzalez (February, 2023)

Vanessa Elizabeth Gonzalez

Neha Govil Also with a Major in Course XVIII

Cale Gregory

Manuel A. Guillen Also with a Major in Course XVIII (September, 2022)

#### Matthew Guo

Aneesh Gupta Also with a Major in Course XVIII

Diptasri Gupta

Sejal Gupta Minor in Economics

**Aparna Ajit Gupte** Also with a Major in Course XVIII

Nicholas F. Gustafson

Naseem Hamed

**Jerry Han** Also with a Major in Course XV-2

Michelle J. He Also with a Major in Course XXI-M

Adriano Hernandez (February, 2023)

Antony Hernandez Mendoza

Jay R. Hilton

Alex Homma

Anson Ruikang Hu (February, 2023)

Allen Huang

Katherine Mary Huang

Neha S. Hulkund Also with a Major in Course XVIII (See also M.Eng., Course VI-P)

Lucas James Igel

Mark Jabbour Also with a Major in Course XVIII

Adam P. Janicki

#### **Kevin Jiang**

**Caroline Linda Jin** Minor in Mathematics (February, 2023)

**Catherine Anne Johnson** 

Quincy T. Johnson

Prabhakar Kafle

Miles Kaming-Thanassi

**Gabriel A. Kammer** Minor in Mathematics (February, 2023)

Ahmed Katary

Mahmoud W. Khalifa

Grace Kim

**Ryan Micah Kim** Minor in Mathematics

Seok Hyeon Kim Minor in Mathematics

**Anjalie Sonia Kini** Also with a Major in Course XIV-1 Minor in Mathematics

Naomi Kawira Kirimi Minor in French

**Giorgi Kldiashvili** Minor in Economics

Maanasa Kotha (February, 2023)

Aleksandar Krastev (See also M.Eng., Course VI-P)

Callie Elizabeth Kunz

Michael K. Kuoch Minor in Biology

Nurullah Giray Kuru Also with a Major in Course XVIII

Ethan A. LaBelle

#### Kelly Thien Lam

**Pedro D. Lantigua** (September, 2022)

Mary Lau Minor in Mathematics

Nguyen Le

Jason J. Lee

**Samuel S. Lee** Minor in Mathematics

Tin Yau Lee

Amy Lei

Matthew Diarmuid Leonard Minor in Physics

Alexandra S. Li

Alvin K. Li Minor in Entrepreneurship & Innovation

Jeff D. Li

Raymond B. Li Also with a Major in Course VIII

Shengtong Li Minor in Economics

Isaac C. Liao Also with a Major in Course VIII

#### Joseph David Licht

Darren T. Lim

Jason Lin

**Raymond Lin** Minor in Mathematics

Sharon Lin

Annie Liu

Helen Xueyun Liu Also with a Major in Course XV-2 Jianna Liu

Katherine Liu Minor in Mathematics

Kyle Yijie Liu (See also M.Eng., Course VI-P)

Richard R. Liu

Sabeen Imtiyaz Lohawala Minor in Linguistics

David Lu (See also M.Eng., Course VI-P)

Edward P. Lu Also with a Major in Course XVIII Minor in Economics

**Helen Lu** Also with a Major in Course XVIII

**Victor Luo** Also with a Major in Course XVIII

Maximo A. Machado

Calvin Michael Alan Maddox

David S. Magrefty

Natasha M. Maniar Minor in Finance

Sean Mann (See also M.Eng., Course VI-P)

Julian James Adeyemi Manyika Also with a Major in Course XXIV-1 (February, 2023)

**Ivy Y. Mao** Minor in Economics Minor in Mathematics

**Jerry W. Mao** Also with a Major in Course XVIII

Megha Maran Also with a Major in Course XV-2

**Zoë Marschner** Also with a Major in Course XVIII **Gustavo Aguiar Martins** Minor in Brain and Cognitive Sciences

Matas Masys

Jenna Marie McClellan

**Kimberly F. McPherson** Minor in Spanish Minor in Design

#### **Frederick Mejia**

**Praneet Mekala** (See also M.Eng., Course VI-P)

Julie L. Meng Minor in Brain and Cognitive Sciences Minor in Music

**Grant M. Miller** Minor in Mathematics (February, 2023)

**Catalina Monsalve Rodriguez** Minor in Design

**Felipe Morales Osorio** 

Aleksandr Morozov

Nolan N. Moy

Natalie Muradyan

Anushka Manchanda Nair

Haley M. Nakamura Minor in Environmental Engineering Science

Mai Ngoc Nguyen

**Nghi Hoàng Nguyễn** Minor in French

Ngoc B. Nguyen

Thanh P. Q. Nguyen

Marco Lu Nocito

Brian Ntanga

#### **Troy P. Oliveira**

**Ryuta R. Ono** Minor in Brain and Cognitive Sciences

Nicholas J. Ortiz

Anne Ouyang (See also M.Eng., Course VI-P)

**Trudy E. Painter** Also with a Major in Comparative Media Studies

#### **Daniel Papacica**

**Isabella Pedraza Pineros** Minor in Finance Minor in French

Katherine Virginia Pelton Minor in Urban Studies and Planning

Sergio Angel Perez

Ian C. Pérez Collazo

**Trent J. Piercy** 

McKinley M. Polen

Sebastián J. Portalatín Cortés

Subha Nawer Pushpita Also with a Major in Course XVIII

Bryan Pyo Minor in Mathematics

Benjamin Qi

Alex Hong Quach

Erica Ward Radler

Tejal V. Reddy

James R. Richardson Also with a Major in Course XVIII

Michael Ashton Robinson

**Sebastián Ignacio Rodríguez** (February, 2023) Victor Rong Also with a Major in Course XVIII Minor in Public Policy (See also M.Eng., Course VI-P)

Alex Sanchez

Athena Sanchez

Karissa Aitana Sanchez Also with a Major in Course XXIV-2

Gerardo U. Segura

Andrew Sepúlveda Minor in Music Technology

**Deniz Bilge Sert** 

Mohammed Shafim

Kevin Z. Shao

**Ishana A. Shastri** Minor in Mathematics

Yichuan Shi Also with a Major in Course XVII

Zhining Shi

**Jonathan P. Shoemaker** Also with a Major in Course VIII

**Anjali Singh** Also with a Major in Course XVIII

Parul Singh

Adam Zhun Hua Snowdon

Richard P. Sollee III Also with a Major in Course VIII

Shashvat Srivastava Also with a Major in Course XVIII

**Benjamin Steffen** 

Nicole C. Stiles

Andrew P. Stoddard Minor in Management **George W. Stultz** Also with a Major in Course XV-2

Jocelin Su Also with a Major in Course XVIII (See also M.Eng., Course VI-P)

Vighnesh Subramaniam Minor in Linguistics

Anna T. Sun

Melinda M. Sun Also with a Major in Course XVIII

Michael C. Sutton Minor in Chinese

Malobika Fahmida Syed

Matthias A. Takele

George Tang

Sandra S. Tang Minor in Design

**Julius Liang-Li Tao** Minor in Mathematics

Laena Tieng

**Kevin Cao Tong** Also with a Major in Course XVIII

Megi Topalli

**Gianna Nana Ama Boadi Torpey** Minor in French

Amani Toussaint

Raymond Tran (February, 2023)

**Giorgi Tskhadadze** (February, 2023)

Benjamin G. Urquhart

**Pranali Vani** Minor in Brain and Cognitive Sciences

Guillermo Vasquez

Saaketh Vedantam Also with a Major in Course XVIII Minor in Economics (See also M.Eng., Course VI-P)

**Boris Velašević** Also with a Major in Course XVIII Minor in Economics

Daniela Velez

**Vanessa Vera** Minor in Japanese

Linh T.M. Vo

David A. Vulakh (February, 2023)

**Crystal Wang** Also with a Major in Course XIV-2 (February, 2023)

**Emma Jordan Wang** Also with a Major in Course XVIII

Haijia Wang

Jett Z. Wang

Sean Wang Also with a Major in Course XVIII Minor in Economics

Shih-Yu Wang

**Stanley Wang** Minor in Mathematics

**Yuyuan Wang** Also with a Major in Course XXIV-2

Dylan Weber

Jordan W. Wilke Also with a Major in Course IX

Edmund D. Williams, Jr. (February, 2023)

Lola Carmel Wolf Minor in Design

Madison Wong

Arun Wongprommoon Also with a Major in Course XXIV-2

Andrew S. Wu Also with a Major in Course V Minor in Mathematics

David H. Wu (February, 2023)

Hui Min Wu

Jasmine Wu

David T. Xiong Also with a Major in Course VIII

Jessica Yulong Xu Minor in Mathematics

**Erika Yang** Minor in Literature

Hanna Yang Also with a Major in Course XVIII

Jason Y. Yang (February, 2023)

Jason Y. Ye (September, 2022)

Marvin Zetina-Jimenez

Allen J. Zhang (February, 2023)

**Angela Cao Zhang** Also with a Major in Course XVIII

**Angela Weilin Zhang** Minor in Anthropology

**Angelina Zhang** Minor in Mathematics

Maggie Q. Zhang

Michael S. Zhang Also with a Major in Course XVIII Minor in Physics

**Jenny Wu Zhao** Minor in Music Minor in Japanese

#### Adam C. Zheng

Yiming Zheng Minor in Mathematics (See also M.Eng., Course VI-P)

Howard N. Zhong Also with a Major in Course XVIII Minor in Economics (See also M.Eng., Course VI-P)

Alice S. Zhu Minor in Mathematics

Ophelia M. Zhu

Xiaoyang Zhuang Also with a Major in Course VIII (September, 2022)

# Bachelor of Science in Artificial Intelligence and Decision Making

Course VI-4 Department of Electrical Engineering and Computer Science in conjunction with the Schwarzman College of Computing

Marlond G. Criollo Minor in Music Technology

**Tahmid M. Jamal** Also with a Major in Course XVI Minor in Economics Minor in Mathematics

# Bachelor of Science in Computer Science and Molecular Biology Course VI-7

Department of Electrical Engineering and Computer Science in conjunction with the Schwarzman College of Computing

Amulya S. Aluru

**Caroline Bao** Minor in Music

Xi Chen

**Julia Graziella Contini** Minor in Economics

**Brady J. Darby** Minor in Mathematics

Daniel R. Gutierrez (February, 2023)

#### Hee Jae Hong

**Uzuki Horo** Also with a Major in Sci., Tech., & Society

Bridget Li Minor in Economics

#### Katherine Seungjoo Lim

**Sherry Shu Yuh Nyeo** Minor in Management Minor in German

**Nten P. Nyiam** Minor in Mathematics

Mercy C. Oladipo

Jillian Emma Parker

Jacob Shapiro Minor in Literature

**Eren C. Shin** Also with a Major in Course IX

Julia Situ Minor in French

#### **Raina Win Yee Rachel Thomas**

**Emma Pascale Tysinger** Minor in Economics

**Diane K. Zhang** Minor in Spanish

# Bachelor of Science in Computer Science, Economics, and Data Science Course VI-14 Department of Electrical Engineering and Computer Science in conjunction with the Schwarzman College of Computing

Eric Bell, Jr.

Jordan Andre Anthony Billings

Kevin Bunn

Kristina Y. Chen

Aaron K. Fuchs

**Lindsey C. Gambino** Also with a Major in Course XV-2

**Ananya L. Gurumurthy** Minor in Music

Tyler D. Kim

**Shivani Konduru** Also with a Major in Course XV-3

**Sofie Elyse Kupiec** Minor in Business Analytics

**Jason D. Lee** Also with a Major in Course XV-2

Jimin J. Lee

Matthew Ethan Leonard

Alice Martynova

Nicolas P. Minudri Also with a Major in Course XV-3

**Christina Marie Mirro** Minor in Mathematics

**Dev P. Patale** (February, 2023)

**Christopher W. Picard** Also with a Major in Course XV-2

#### Elizabeth Popkov

Francisco Rafael Proskauer Valerio

**Kirsi Katherine Rajagopal** Minor in Mathematics

Federico Ramirez Also with a Major in Course XXIV-2

Karyn Nicole Real Also with a Major in Course XV-2

**Evan J. Schaefer** Also with a Major in Course XV-2

#### Derek Shen

Anne Jegeris Snyder

**Jay A. Theriault** Also with a Major in Course XV-2

Nicole Bjerre Toft

Nina Yusi Wang Also with a Major in Course XV-2

Kailey Yang Minor in Mathematics

Miriam C. Zuo Also with a Major in Course XVIII Minor in Business Analytics

# **Bachelor of Science in Chemical** Engineering

Course X Department of Chemical Engineering

### Seraphin Wing Castelino

**Jose Luis Gomez** Minor in Energy Studies

**Oscar Guardado Chacón** Also with a Major in Course XV-3

Claire Aerim Kim Minor in Environment and Sustainability

Kevin Li

Evan B. Moore

Hong Nguyen

Nigara Nizamidin

Duha Syar

Binette M. Wadda

Sandy Yang Minor in Asian and Asian Diaspora Studies Minor in Energy Studies

Victoria Y. Yang

Kara Angie Zhang (February, 2023)

Bachelor of Science in Chemical-Biological Engineering Course X-B Department of Chemical Engineering

**Lauren Meredith Abrahamsen** Minor in Environment and Sustainability

#### Benjamin D. Burke

**Grace Ann Carlson** Also with a Major in Course VII

**Stefan Damchevski** Also with a Major in Course XXI-G

**Dominique C. De Fiesta** Also with a Major in Course VII

**Giselle Duque** Minor in Literature

Freya Edholm Also with a Major in Course XVIII-C Minor in Chemistry

Alexis L. Jones (February, 2023)

Michelle Mercedes Mantilla

**Pragati Krithika Muthukumar** Also with a Major in Course VII

Josephine Olaitan Nonyelum Oshodi

**Christian Paolo Otero** Minor in Computer Science

Mideum Abraham Park Minor in Chemistry

Matthew Jonathan Sousa

Bachelor of Science in Engineering as recommended by the Department of Chemical Engineering Course X-ENG Department of Chemical Engineering

**Ololade Oreoluwa Abdulai** Also with a Major in Course XV-1

Maela Grace Hickling Minor in Chemistry

Nicole Brianna Jacobsen

**Liliana Jelu Reyes** Minor in Business Analytics

**Anna Mai** Minor in Management

**Lizi Maziashvili** Minor in Computer Science

Dechen T. Rota

Daena A. Schuh

Hannah Marie Spilman Minor in Environmental Engineering Science

Julia Grace Van Cleef Minor in Computer Science

Julie Yu Minor in Computer Science (February, 2023) **Bachelor of Science in** Aerospace Engineering

Course XVI Department of Aeronautics and Astronautics

**Frederick Henry Oladimeji Ajisafe, Jr.** Also with a Major in Course XXI-M

Brooke Madison Bensche Minor in Management

Gabriella Lee Berrey Minor in Spanish

Jared Ray Boisvert

Jared Boyer Minor in Chinese

Robert L. Cato III

Matthew Hikaru Clingerman

Samuel Thomas Costa Also with a Major in Course XVIII

Morgan Ferguson

Frank Gonzalez

Ari Goodwin Grayzel (February, 2023)

**Charlotte Hibdon Gump** Minor in Spanish

**Cameron Philip Hilman** 

Summer A. Hoss

Frederick Seidel Humm

William C. Kupiec

**José A. Lavariega-Gómez** Minor in Statistics and Data Science

Alexis Lepe Minor in Russian and Eurasian Studies

Steven Liu

Amira Malik

Joshua Thomas Malone

Andrew C. Manwaring Minor in Computer Science

**Grace C. Mao** Minor in Mathematics

Matthew J. McGillick

Matthew L. Mora

John M. Oswald

Alberto Matias Peña

John Conrad Pendergrast Minor in Political Science

Julian L. Powers

Jake T. Sonandres Minor in Computer Science

**Kyle A. Sonandres** Minor in Computer Science

**Theodore George St Francis** Minor in Mechanical Engineering

**Emma Catherine Tauckus** 

Olivia Kathleen Tobin

Preston James Tower

Christopher E. Vargas

**David von Wrangel** Also with a Major in Course VI-2

Erina Yamaguchi

**Kwadwo A. Yeboah-Asare, Jnr.** Minor in Computer Science

Jawad Firas Yousef

Tai Zheng

Bachelor of Science in Engineering as recommended by the Department of Aeronautics and Astronautics Course XVI-ENG Department of Aeronautics and Astronautics

Naylah Sinclair Mathis Canty Also with a Major in Course XI

Lauren Anne Carethers

Luke Joseph Antonio de Castro

Yonatan Wesenyeleh Delelegn Also with a Major in Course VI-2 (February, 2023)

Paarth V. Desai

Angel R. Gomez Cruz

Ethan M. Hammons

Mohamed A. Mohamed Also with a Major in Course VI-2

Joana N. Nikolova

**Edward St. John Rivera** Also with a Major in Course VI-3

Austen J. Roberson Minor in Computer Science

Akila Saravanan Also with a Major in Course VI-9 Minor in Writing

Justin D. Schiavo

Blake T. Shepherd

Sienna Holly Williams Minor in Computer Science

14 School of Engineering

Bachelor of Science in Biological Engineering Course XX Department of Biological

Marissa Lynn Abbott Minor in Chemistry

Engineering

**Soleh B. Anderlini** Minor in Environment and Sustainability

Rami A. Bikdash

Selam Tadesse Bulti

**Kira Reese Buttrey** Minor in Spanish Minor in Computer Science

Lauren M. Castle

Anjali R. Chadha Also with a Major in Course XXI-L

Sophia W. Chen

Charles William Coffey III Minor in Computer Science (February, 2023)

Victor Michael Damptey Minor in Spanish

Haley Kanoelani Evile Minor in Linguistics

**Daphne Alecia Faber** Minor in Spanish

Haley Madison Fernandez Minor in Computer Science

**Catherine Lynn Griffin** Minor in Computer Science

**Sophie J. Guo** Also with a Major in Course VI-2

Melissa C. Hummel

**Juan S. Ibarra Arriaga** Minor in Computer Science Stuti Khandwala Also with a Major in Course VI-3 Minor in Chemistry Minor in Economics

#### Seung Hyun Kim

**Sky Haneul Kim** Minor in Political Science

**Preeti Sai Parimala Krishnamani** Also with a Major in Course XV-1

#### Marcos Labrado

Shirley Li Minor in Computer Science

Louise Gabrielle C. Lima Minor in Brain and Cognitive Sciences Minor in Computer Science

Kathleen Ruth Love

**Emmeline Rose MacPherson** 

Chloe Valpangha McCreery

Kacper K. Migacz

Vainavi Mukkamala Also with a Major in Course VI-2

Bhuvna R. Murthy

**Conrad Gregory Oakes** 

Lucia T. Padilla Minor in German

Veronica Marie Perdomo

Sarah E. Pertsemlidis

Miriam L. Rittenberg

Reed Elizabeth Robinson

Isabella Grayce Salinas Minor in Biology

Laura Schmidt-Hong

Shruthi C. Shekar Minor in Entrepreneurship & Innovation

Seung Hyeon Shim Minor in Chemistry

**Christina Ta** (February, 2023)

Anru Tian

#### Abigail M. VanLonkhuyzen

Sangita Vasikaran Minor in Design

Kenneth J. Wei Minor in Computer Science

Jennifer L. Wen Minor in Brain and Cognitive Sciences

Veronica W. Will

**Amber Elisabeth Williams** Also with a Major in Course VII

Alexandra N. Wolff

Jennifer X. Xiong

Megan L. Xu Minor in Earth, Atmospheric, and Planetary Sciences (February, 2023)

Amy X. Zhong Minor in Computer Science

Julian Zulueta Minor in History of Architecture, Art and Design Bachelor of Science in Nuclear Science and Engineering Course XXII Department of Nuclear Science and Engineering

**Francisco Arellano, Jr.** (February, 2023)

**Brendan C. Vaughan** Minor in Economics Minor in Energy Studies

Bachelor of Science in Engineering as recommended by the Department of Nuclear Science and Engineering Course XXII-ENG Department of Nuclear Science and Engineering

Alexander B. Bookbinder Minor in Biology Minor in Chinese

Loukas L. Carayannopoulos (February, 2023) (See also S.M., Course XXII)

Jaron F. Cota Also with a Major in Course VIII

Calvin James Cummings Minor in Mechanical Engineering

Katelin Du

**Zoe Lilah Fisher** (See also S.M., Course XXII)

Arthur Samuel Zangi

# **16** School of Engineering

# SCHOOL OF HUMANITIES, ARTS, AND SOCIAL SCIENCES

# Bachelor of Science in Economics Course XIV-1 Department of Economics

**Theodore Kingston Black** Also with a Major in Course XV-1

Gina Choi (February, 2023)

Hannah Kim Also with a Major in Course VI-2

# Bachelor of Science in Mathematical Economics Course XIV-2 Department of Economics

#### Sarah Rose Aaronson

# Bachelor of Science in Political Science Course XVII

Department of Political Science

David A. Spicer Minor in American Studies

# **Bachelor of Science in History**

Course XXI-H *History* 

**Tobit Levin Glenhaber** Also with a Major in Course XVIII

# **Bachelor of Science in Music** Course XXI-M *Music and Theater Arts*

#### Theresa C. Caso-McHugh

#### Carina R. Masuelli

**Tristan S. Shin** Also with a Major in Course XVIII Minor in Computer Science

### **Bachelor of Science in Writing**

Course XXI-W Program in Writing and Humanistic Studies

Mikel C. Carvajal Minor in Comparative Media Studies

Alan Y. Zhu Also with a Major in Course VI-3

# Bachelor of Science in Humanities Course XXI Department of Humanities

### Diane Mwizerwa

# Bachelor of Science in Humanities and Engineering Course XXI-E Department of Humanities

Kidist E. Adamu

Jonah A. Baskerville (September, 2022)

#### Anna G. Dawson (February, 2023)

Luis Angel Dilone (February, 2023)

#### Justin Thomas Ferris

Josephine Camille Tongson Mejia

Caroline D. Powers

Brinley L. Zhao

# Bachelor of Science in

Humanities and Science Course XXI-S Department of Humanities

Catherine Hong Also with a Major in Course II-A

# Bachelor of Science in Philosophy

Course XXIV-1 Department of Linguistics and Philosophy

Isaiah M. Jeremie (February, 2023)

# Bachelor of Science in Linguistics and Philosophy Course XXIV-2 Department of Linguistics and Philosophy

Michelle Liu

# Bachelor of Science in Comparative Media Studies

Program in Comparative Media Studies

John Wesley Lewis Also with a Major in Course VI-3

#### Michael Hayden Teodros

# SLOAN SCHOOL OF MANAGEMENT

Bachelor of Science in Management Course XV-1 Sloan School of Management

**Carson Glen Collard** Also with a Major in Course XIV-1

Abiola M. Familusi

Amanda S. Hu Also with a Major in Course VII (February, 2023)

#### Salome Otero Gutierrez

**Valeria Robayo** Minor in Biology Minor in German

**Emily J. Tess** 

Marina Tosi Minor in Comparative Media Studies (February, 2023)

# Bachelor of Science in Business Analytics Course XV-2 Sloan School of Management

**Graham A. Cartwright** Also with a Major in Course VI-14

Min K. Cho Minor in Computer Science

**Oakley B. Dehning** Also with a Major in Course VI-14

Ankita T. Devasia Minor in Chinese Minor in Statistics and Data Science

Hudson Locke Hooper Also with a Major in Course VI-3

Sawyer P. Koetters Also with a Major in Course VI-14 Minor in Mathematics (February, 2023) Kathryn Michaela Linz Also with a Major in Course XIV-2 (February, 2023)

**Vivian Laura Lo** Minor in Computer Science

Matthew Fellows Nay Also with a Major in Course VI-14

**Christopher William Noga** Also with a Major in Course VI-14

Dana Osei

Shanaelle Liana Petty

David M. Vapnek Also with a Major in Course VI-14

Henry H. Wang Also with a Major in Course VI-14

Bachelor of Science in Finance Course XV-3 Sloan School of Management

**Anh Vu Hoang Dinh** Also with a Major in Course VI-4

**Pamela M. Duke** Minor in Economics Minor in Environment and Sustainability

Laurena Huh Also with a Major in Course VI-14

**Jakob Johannes Jarczynski** Minor in Economics

#### Ryan Taesan Kim

Kael P. Kordonowy Minor in Economics

Lane Michael Lipschultz Also with a Major in Course XIV-1

**Tingyi Lu** Also with a Major in Course VI-14 Haran S. Nadarajah Also with a Major in Course VI-14

Emuoghenekohwo J. Ogilo

Haley N. Samuelsen Also with a Major in Course XVIII Minor in Economics

Emily Minsi Wang Minor in Economics

Anqi Yang Also with a Major in Course VI-3

# 18 Sloan School of Management

# SCHOOL OF SCIENCE

Bachelor of Science in Chemistry

Course V Department of Chemistry

Bader S. Almulhim

Anna S. Bair

**Yu-Che Chien** Also with a Major in Course VIII

Nicholas J. Guiliano

Andrew D. Hennes Also with a Major in Course VI-7 (See also M.Eng., Course VI-7)

Edward H. Jin Also with a Major in Course VI-2 Minor in Mathematics (See also M.Eng., Course VI-P)

Skyler Chloe Jones Also with a Major in Course XXI-L (February, 2023)

Jasmin A. Kern Minor in Writing

Anton Ni Also with a Major in Course XVIII-C

Jupneet K. Singh

**Dion S. Sukhram** Also with a Major in Course VIII

Bachelor of Science in Chemistry and Biology Course V-7 Department of Chemistry

**Gabriella M. Aponte** Minor in Literature

Vinícius Figueira Armelin Also with a Major in Course XX Minor in Computer Science (February, 2023) **Gabriel Alberto Caamaño Lasanta** Minor in Literature

Pedro A. Colón

**Dhyey S. Gandhi** Also with a Major in Course VIII

**Ruiyang Guo** 

Chae Rin Kim

Chanseo Lee

Albert C. Liu Also with a Major in Course VIII

Sophia Marie Mirda

Anton Morgunov Minor in Computer Science

Ejiro G. Omoruyi

Jeffrey S. Shi (February, 2023)

#### Oliver Tan

Westley Wenbo Wu Also with a Major in Course XVIII Minor in Literature

### Yu Meng Zhang

Bachelor of Science in Biology Course VII Department of Biology

Negin Amouei

Yu-Chi Cheng Minor in Writing

Aslan Nalani Keiko Cook

Kenneth Leon Cox

Yueyang Fan

**Gwyneth Abigail James** 

Sahithi Madireddy Minor in Women's and Gender Studies

**Emily McDermott** 

Liza D. Metcalf

Thao Phuong Nguyen

Shaida K. Nishat Minor in Public Policy Minor in Science, Technology, and Society (February, 2023)

**Stephany Panhasopheak Pang** Minor in Computer Science

Shirin Shahsavari

Madison Andrea Sneve Minor in Brain and Cognitive Sciences Minor in Ancient and Medieval Studies

**Emily Jade Sullivan** Minor in Asian and Asian Diaspora Studies

Alexandra E. Vernich

Javier Antonio Vilá Ortiz

# **Bachelor of Science in Physics** Course VIII Department of Physics

Faisal F. Alsallom

**Daniel E. Amaya** Also with a Major in Course XVIII

Hillary Diane A. Andales Minor in Astronomy Minor in Science, Technology, and Society

Derek M. Baldwin

Luis Gabriel Carlos Bariuan

Maya Beleznay Minor in French

Kayla S. Berg Minor in Music

**Thomas Ross-White Bergamaschi** Also with a Major in Course VI-3

**Vincent W. Bian** Also with a Major in Course XVIII-C

Lisa Nicole Blomberg Also with a Major in Course XXI-M

**Kylee Taelynn Carden** Minor in Astronomy Minor in History

#### Aidan Durr Chambers

Ketandu D. Chiedu Also with a Major in Course VI-3

Gabriela M. Corea Also with a Major in Course II

Laura L. Cui Also with a Major in Course XVIII

**Mohit Dighamber** Also with a Major in Course VI-14 Minor in Business Analytics

**Dahlia Louise Dry** Also with a Major in Course VI-1 Minor in Spanish

**Jiahui Du** Also with a Major in Course VII

**David Shen Fang** Also with a Major in Course VI-3

**Crew James Fritsch** 

**Tianhui Jie** Minor in Design

Ashish Kalakuntla Also with a Major in Course VI-2 Minor in Mathematics

Anika Elizabeth Katt Minor in Nuclear Science and Engineering **Timothy H. Kostolansky** Also with a Major in Course VI-3

Vedang Lad Also with a Major in Course VI-2

Lauren Hsing-Tze Li Also with a Major in Course XVIII

**Chih-Lun Julian Liu** Minor in Mathematics

**Richard Luhtaru** Also with a Major in Course VI-3

Luen Malshi

#### Ivan J. Marshall

Hendrik T. Mayer Also with a Major in Course VI-3 Minor in Mathematics

Ilan Mitnikov Also with a Major in Course VI-9

Alejandro D. Perez (February, 2023)

Sahil Pontula Also with a Major in Course VI-1

Sanjay A. Raman Also with a Major in Course XVIII Minor in Music

**Anna Flora Rasmussen** Also with a Major in Course VI-7 Minor in Philosophy

Aden J. Rothmeyer Also with a Major in Course XXIV-1 Minor in Biology

**Orisvaldo Salviano Neto** Minor in Mathematics Minor in Astronomy

**Rila Shishido** Also with a Major in Course XXI-M Minor in Astronomy

#### Pamela Stark

**Emma Cecilia Stavropoulos** (September, 2022)

Luke M. Stewart (February, 2023)

Xiangkai Sun Also with a Major in Course XVIII-C

Joshua Torres

Anastasiia V. Uvarova Also with a Major in Course VI-3

Ronald L. Vaughn II Also with a Major in Course XXIV-1

#### Inoela Udela Vital

**Brian L. Xiao** Minor in Mathematics

**Julian R. Yocum** Also with a Major in Course VI-4

Daniela Alessandra Zaidenberg Also with a Major in Course VI-2

Bachelor of Science in Brain and Cognitive Sciences Course IX Department of Brain and Cognitive Sciences

Chelsea C. Ajunwa (September, 2022)

Reese M. Alley

**Elizabeth Carbonell** Also with a Major in Course VII

Jimmy Chen

Maryann Uche Ogochukwu Chidume Minor in Chemistry

**Edmund S. Corcoran** Minor in Biology

**Teresa H. Gao** Also with a Major in Course VI-3

**Shelby Kaywalin Laitipaya** Also with a Major in Course VII Minor in Music Madison Rose Leone Also with a Major in Course VII (February, 2023)

Bezawit M. Sahile

Alexandra Renee So Also with a Major in Course XV-1

Molly A. Stephens (February, 2023)

# **Bachelor of Science in Computation and Cognition**

Course VI-9 Department of Brain and Cognitive Sciences in conjunction with the Schwarzman College of Computing

Alex S. Abate (February, 2023)

Samar Abu Hegly

Samuel T. Acquaviva

Sami Rafat Amer

**Brian Alton Bailey** 

**Héctor F. Cantú Bueno** Also with a Major in Course XVIII Minor in Biology Minor in Statistics and Data Science

Dasha A. Castillo

**Emma Allya Chabane** Minor in Spanish

**Curtis C. Chen** Also with a Major in Course XXIV-2 (See also M.Eng., Course VI-9)

Alexis Dah-Eun Cho Minor in Biology

Jesus Crespo

**Itgel Delgerdalai** Also with a Major in Course XV-3

Otilia Don

#### Nicole E. Dundas

Sean Joseph Elliott Also with a Major in Course XVIII

#### Kathleen N. Esfahany

#### **Marie Diane Fadel**

Crista M. Falk Minor in Music

**Jiahai Feng** Also with a Major in Course VIII Minor in Mathematics

#### Ariel S. Fuchs

Willem J. Guter Minor in Philosophy

Nelson Hidalgo Julia

Stephanie Pui-kay Howe

**Miles Tsuji Hudgins** 

Raphaela Hyowon Kang Minor in Biomedical Engineering

Nicole Kim

Sean E. Knight Minor in Comparative Media Studies Minor in Management

#### Noa Korneev

#### Eli Kramer

Linette Kunin (See also M.Eng., Course VI-9)

**Jiachen Elizabeth Lee** Minor in Mathematics

Siyi Lin Also with a Major in Comparative Media Studies Minor in Chinese

**Qingyuan Lu** Minor in Mathematics Annika K. Magaro Also with a Major in Course XVIII

**Sofia Mireille Márquez** (February, 2023)

Kinan Remy Martin Minor in Linguistics

Camila Meredith Miranda-Llovera

Thomas Tien Ngo

Anita Podrug

Hayley D. Popiel (February, 2023)

Shreyaa Raghavan

Shruti Ravikumar Minor in Entrepreneurship & Innovation

Nina J. Rhone

Shaunticlair W. Ruiz

Somaia Rahman Saba

Varsha Reddy Sandadi

Miles B. Silva

**David Ulloa** Also with a Major in Course XVIII

Alyssa Lauren Unell

Nico van Wijk

Kayla Marie Villa

Brigette L. Wang

Mingye Wang

Liane Z. Xu Also with a Major in Course XVIII

Alexis Yang

Kaitlin W. Zareno

Katherine S. Zeng Also with a Major in Comparative Media Studies

# Bachelor of Science in Earth, <u>Atmospheric, and Planetary</u> <u>Sciences</u> Course XII Department of Earth, Atmospheric, and Planetary Sciences

**Aviva B. Intveld** Minor in Archeology and Materials

Skylar Shell Larsen Minor in Comparative Media Studies

Helena Anne McDonald

Kaitlyn E. Przydzial Minor in Biology

Bachelor of Science in Mathematics Course XVIII Department of Mathematics

#### Keita Tanabe Allen

**Erik A. Anderson** Minor in Finance Minor in Computer Science

#### **CJ** Angrist

**Ilani S. Axelrod-Freed** Minor in Physics

Rose M. Bielak Minor in Writing

Krit Boonsiriseth Also with a Major in Course VI-3

Merrick Cai Also with a Major in Course VI-2

**Gabriela René Carcasson** Minor in Spanish

Hem Narayan Das Chaudhary Also with a Major in Course X-B Ahmed Zawad Chowdhury Minor in Writing Minor in Computer Science

#### Enrico Celestino Colón

**Robert Volpe Cunningham** Also with a Major in Course VIII

Michael Ziyang Diao Also with a Major in Course VI-2 (See also M.Eng., Course VI-P)

Justin Edwins Minor in Computer Science

Alison Fang Also with a Major in Course VI-14

Maria-Sophia Fedyk Also with a Major in Course VI-3 Minor in Literature

**Seth Joseph Fine** Also with a Major in Course VI-3

Siwakorn Fuangkawinsombut Also with a Major in Course VI-3

Maritza A. Gallegos

Vishruti Ganesh Also with a Major in Course VI-3 Minor in Music

Sarah J. Gao Also with a Major in Course VI-14

**Einat Gavish** Also with a Major in Course VI-3 Minor in Environment and Sustainability

#### Benjamin C. Grossman

#### Milan Haiman

Frank Y. Han Also with a Major in Course VIII

Joseph W. Heerens Also with a Major in Course VI-3

#### John W. Hegelmeyer

**Xzavier W. Herbert** Also with a Major in Course XXI-M Peter W. Hoffman Minor in Finance

Brian R. Huang Also with a Major in Course VI-3 (February, 2023)

Vincent Huang Minor in Biology Minor in Computer Science

**Zachary Dylan Hunsucker** Also with a Major in Course VIII

Shawn S. Im Also with a Major in Course VI-3

Sebastian J. Jeon

Catherine R. Ji Also with a Major in Course VIII

Richter H. Jordaan Also with a Major in Course XXI-L

**Dain Kim** Also with a Major in Course VI-3

Joehyun Kim Minor in Finance

Daishi Kiyohara Minor in Physics

Abigail Jane Kolyer

Zachary E. Lee Minor in Physics

**Salvatore A. Lentine** Also with a Major in Course XV-2

Jacob Ryan Lerma

Alex J. Li

Anqi Li

Jeffery G. Li Also with a Major in Course VI-3 Minor in Music

Jovita Li Minor in Computer Science

#### Ayodeji Lindblad

**Dylan K. Liu** Also with a Major in Course VI-3

Kevin J. Liu Also with a Major in Course VI-3 (See also M.Eng., Course VI-P)

Lingyi Ma Also with a Major in Course VI-3

Rachana Madhukara Also with a Major in Course VI-2

**Abraham I. Montes** Minor in Computer Science

Atharv V. Oak Minor in French (See also M.Eng., Course XX-P)

Ariana A. Park Also with a Major in Course VIII Minor in Economics

Mario A. Pereira

Sebastian A. Perez (February, 2023)

#### **Brandon** Pho

Xiaoran Qu Also with a Major in Course VI-3 Minor in Music (See also M.Eng., Course VI-P)

**Carl Joshua T. Quines** Also with a Major in Course VI-3

Tejas R. Rao

**Brian E. Reinhart** Also with a Major in Course XXIV-2

Mohan Richter-Addo Also with a Major in Course VIII

Aleksandre Saatashvili

**Emille Alessandre Santos Sagastume** Also with a Major in Course VI-9 Minor in Music Minor in Linguistics **Carl Benjamin Schildkraut** Minor in Computer Science

Jordan Ashley Sell Minor in Computer Science Minor in Statistics and Data Science

**Carlos Andres Solano Saltachin** Minor in Computer Science

John I. Sragow Also with a Major in Course VI-3

Daniel E. Stewart Also with a Major in Course VI-3

#### **Colin Tang**

Andrew Lee Tockman Also with a Major in Course VI-3 Minor in Linguistics

Anton Trygub Also with a Major in Course VI-3 Minor in Philosophy

Naveen K. Venkat Also with a Major in Course VI-3

Allen Wang Also with a Major in Course VI-2

**Rona Y. Wang** Also with a Major in Course VI-3

**Caroline Clancy Warren** Also with a Major in Course VI-14 Minor in Business Analytics

Alexander R. Weiler Minor in Computer Science

Ian T. Williams Minor in Chinese

**Derrick G. Xiong** Also with a Major in Course VI-3

**Isaac S. Zhang** Also with a Major in Course VI-14

**Stan Zhang** Also with a Major in Course VI-14 Minor in Business Analytics **Frederick Y. Zhao** Also with a Major in Course VI-3

William Zhao Also with a Major in Course VI-3

**Tianyuan Zheng** Also with a Major in Course VI-14 Minor in Music

Andy Y. Zhu Minor in Computer Science

**Daniel G. Zhu** Also with a Major in Course VIII Minor in Political Science

# Bachelor of Science in Mathematics with Computer Science Course XVIII-C

Department of Mathematics

Mohammed I. Ahmed Minor in Statistics and Data Science

Walker Anderson

Adam Ardeishar

**Diego M. Arenas** Also with a Major in Course XV-2

Matthew A. Cho

Kaan Dokmeci

Elira Elshani

**Enrique Esparza Villarreal** Minor in Economics

Olivia W. Fan

Zion M. Hadley (February, 2023)

Alina Harbuzova (February, 2023)

Diani K. Jones

Amber Liu Also with a Major in Course XV-2 Minor in Writing

**Gabrielle Kaili-May Liu** Also with a Major in Course IX

Albert Y. Luo

Andrew J. Mah

**Steven C. Marquez** Minor in Mechanical Engineering

Mateo Monterde Minor in Finance

**Cecilia M. Munoz** Minor in Spanish

**Oscar Puente** 

**Mason Joe Reiter** 

**Kyle Alexander Smith** 

Nicolas E. Suter Also with a Major in Course XXI-M

**Ivory Tian-hui Tang** Also with a Major in Course XV-1

Brendan M. Wagner Minor in Economics

Sirena Xinying Yu Minor in Japanese

# SCHOOL OF ARCHITECTURE AND PLANNING

# **Master of Architecture**

Course IV Department of Architecture

**Ous Abou Ras** Feeling Images of the Sun on Earth

Latifa Khalil Yaqoob Alkhayat (February, 2023) Fibers and Fragments: Weaving Local Resources into the Arabian Gulf's Modern Material Culture

**Nada Khalid AlMulla** (February, 2023) What's in a Poche?

**Tim Charlie Tanguy Cousin** (February, 2023) Thermal Collectives: Architectural Imaginaries Beyond Modern Comfort (with O.R. Faber)

**Patricia Dueñas Gerritsen** (February, 2023) Not as Planned

# **Olivier Renaud Faber**

(February, 2023) Thermal Collectives: Architectural Imaginaries Beyond Modern Comfort (with T.C.T. Cousin)

Zekun Fan (February, 2023) NEO-FOXCONN:Analysis and Redesign of Foxconn Campus

**Julian Andrew Escudero Geltman** (February, 2023) Loomings: The Sleep of Reason Produces Monsters

**Paul Soren Gruber** (February, 2023) Into the Rhino-Verse

**Mojolaoluwa Esther Idowu** (See also M.C.P., Course XI) Tabi. Tabbi. Tabique. Tabby

**Jo C. Kim** (February, 2023) Towards Public Housing: Architecture As (Prop)aganda Zachariah Allan Kish-DeGiulio Zanzibar Pizza Hut: Stone Town's Duckorated Sheds

Katherine Emily Koskey (February, 2023) Beyond Topography: Remapping Appalachia

Angela Miriam Loescher-Montal (February, 2023) (See also S.M., Real Estate Development) Nudging Permanence: Berlin's Regulations Meet Temporary Use

**Samuel McCuaig May** (February, 2023) Homebuilder's Songbook

Sasha McKinlay (February, 2023) Architecture Ad Lib: A Field Guide

**Mariana Medrano** Murals

Sacha Gabriel Gregory Valentin Moreau (February, 2023) Disastrous Opportunities: Designing for Post-Hurricane Adaptivity Using Low Carbon Construction Methods on the Destroyed Site of Belle Creole, St Martin: A Construction Research Center

Yoonjae Oh (February, 2023) Not So Correct: Rebuilding with the Fragments of Memories

Natalie Pascale Pearl (February, 2023) Earthly Forces: Rethinking the Potential Energies of the Episodic, Dispersed, and Upredictable

**Vijay Gautham Rajkumar** (February, 2023) Ultra-Smooth

**Arthur Boscoli Salas Rodrigues** (February, 2023) Archidrome Ardalan SadeghiKivi (February, 2023) Doodlebugging: A Bayesian Methodology of Design

**Tristan Searight** Eating On and Beyond the Infinite Corridor

**Jinyoung Sim** (February, 2023) Forward to the Past: Redesigning the Form and Flow of C2C Marketplace

**Benjamin Alexis Tasistro-Hart** (February, 2023) Building Enclosure

Yun Wang (February, 2023) The Architectural Coincidence: Guessing Consciously, Gauging Unconsciously (with H. Wu)

**Emily Jane Wissemann** (February, 2023) A Draft Resolution Supporting the Municipal Authority to Rearrange: A Non-Optimized Methodology for Doing Less

Haotian Wu (February, 2023) The Architectural Coincidence: Guessing Consciously, Gauging Unconsciously (with Y. Wang)

**Ziyan Zhang** (February, 2023) Wrinkles

# Master of Science in

Architecture Studies Course IV Department of Architecture

Shubhekshya Bhandari Unsettling Roads: Ethnographies of Dust Across Rural Nepal

**Luna BuGhanem** Min B\*\*īd Lab\*\*īd (from Far to Far): On Homemaking under Diasporic Conditions **Dimitrios Chatzinikolis** (See also S.M., Course VI) Making Hands: Neural Implicit Manifold Learning of Hand Gestures

Qingyi Duanmu

#### **Ganit Goldstein**

Fashioning Closed Loops Data-Driven 3D Printed Textiles for Customized Garment Manufacturing

### Mark Anthony Hernandez-Cornejo

The Vernaculars of Our Networks: From the Cloud to a Plurality of Grassroots Digital Infrastructures

#### Kecheng Huang

City as the Infrastructure of Innovation: Insights and Proposals for Shaping Shenzhen's Innovation Districts and Knowledge-Based Industry

#### Pramada Jagtap

Humanizing Urban Waters: Civilian Led Water Corps to Strengthen Decentralized Water Systems in Western India

Jensen Avery Johnson

The (a)rchitectural Lexicon of (B)lack Hair: A Production of Knowledge

Zain Karsan (See also S.M., Course II) Liquid Metal Printing

**Il Hwan Kim** Geomorphic Concrete Material and Fabrication Strategies for Heterogeneous Concrete Morphology

#### Aikaterini Lamprou

(See also S.M., Course VI) The Shape of Music. Computational Specification of Hand Gestures in Piano Playing

#### Yiwei Lyu

Early Stage Embodied and Operational Analysis for Guiding Sustainable Architectural Design Decisions

#### Kevin André Malca Vargas

Yaku Cosmo-Infrastructures Designing with Water Across the Andes

#### Khushi Nansi

Her Playing Eye: Courtesans at Chess in the Book of Games (c. 1283/84)

Pimpakarn Rattanathumawat

The Monkey Cheeks Toolkit: Design Strategies for Mitigating Flood Impacts in the Bangkok Metropolitan Area

#### Rohit Priyadarshi Sanatani

(See also S.M., Course VI) PLACEIFY: A Data-Driven Framework for Evaluation-by-Analogy in Early-Stage Urban Analysis and Design

Zachary Steven Schumacher Between the Lines: Encoding Relations Through Body, Tool, and Algorithm

#### Huiwen Shi

(February, 2023) Big Data Needs Small Data: Exploring Digital Adaptability of Restaurants in the Context of Covid-19 in Boston

#### Nanase Nakamura Shirokawa

When War Becomes Peace: Ruination and Transvaluation in the Hiroshima and Nagasaki Peace Memorial Parks

#### Jehanzeb Shoaib

Critical Cartographies of Transnational Infrastructure-Led Urbanization

Afy Déborah Lauren Tsogbe Limits of Expression: On Touch, Emotion, and Communication

Han Tu (See also S.M., Course VI) Analyzing Affective Responses to Virtual Spaces Using Physiological Sensors and Verbal Descriptions

**Mona VijayKumar** (September, 2022) Ery Urbanism: Framework for Water Inclusive Urban Growth in Chennai

Sarine Gacia Vosgueritchian Looking for Pirdoudan: The Past, Present, and Future of Mining in Armenia

# Jiaqi Wang

Gaming Like a State: Historical Strategy Game Victoria and "Keyboard Politics" in China

# Rui Wang

(February, 2023) (See also S.M., Course VI) City Image: A Dynamic Perspective Using Machine Learning and Natural language Processing

#### Ziyuan Zhu

(September, 2022) (See also S.M., Course VI) Unwanted Project: Speculative Design for Circularity

# Master of Science in Art,

<u>Culture and Technology</u> Course IV Department of Architecture

Christopher Joshua Benton

Utopic Déjà Vu: The Power of the Public Hallucination in the UAE

#### Cristóbal Hernan García Belmont

Re-Alimentaciones-Cruzadas: Procesos de Re-Imaginación entre Epistemologías Acústicas/Cross-Feedback: Re-Imagining Relations between Acoustemologies

#### Kazi Ishraki

Performing Trans-Disciplinarity: Exploring Subjectivity and Objectivity in Knowledge Production

**Tzu Tung Lee** (February, 2023) Sailing in the Pirate Sea of Art

#### Wa Liu

(February, 2023) Multispecies Syntopia: Collaborative Survival in the Nuclear Anthropocene

Jose Alejandro Medina Bickford Emergence: Speculative Ecologies &

Evolution in Art

# Ashmi Mridul

Filling the Gaps - Exploring the Scope of Arts-Based Education in Jodhpur

#### Su Yeon Mun

Strategies for Influential Interactivity in the Physical Domain

#### **Christie Nichole Neptune**

Ah New Riddim: A Marked (Black) Axiological Shift Across Space and Time **Hyun Woo Park** How to be Satisfied with Less-than-Perfect Finish

**Luca Smith Senise** Rearrangements - Four Urban Experiments Between Soil and Sky

# Master of Science in Building Technology

Course IV Department of Architecture

#### Juliana Patricia Berglund-Brown

Structural Steel Reuse as a Cost-Effective Carbon Mitigation Strategy

#### Leïlah Yadia Kelly Sory

Physics-Based Estimates of Structural Material Quantities for Urban-Level Embodied Carbon Assessment in Buildings

### **Zhujing Zhang**

(September, 2022) Mitigating Peak Load and Heat Stress under Heat Waves by Scheduling Cooling and Energy Storage Systems

# Master in City Planning

Course XI Department of Urban Studies and Planning

# **Octavie Eleonor Berendschot**

(September, 2022) Power Play: An Historiographic about Women and Urban Renewal

#### Alexander J. Boccon-Gibod

Re-Stitching the Fabric: Urban Highway Removal as an Opportunity for Equitable, Sustainable Transformation

#### Nicholette Paige Cameron

(September, 2022) Implementing (Up)Zoning for Affordability: A Seattle Case Study

#### Shaler Rodney Campbell

Repetitive Flooding in Riverine Towns: Understanding Responses, Barriers, and Challenges for the Future

#### Maria Daniela Castillo Castillo

A Participatory Photo-Mapping (PPM) Framework to Observe and Reflect on the Transformation of Public Space: The Case of the Paseo España Environmental Corridor in Bucaramanga, Colombia

#### Yuchen Chai

(See also S.M., Course VI) Determinants and Interventions for Physical Activity Adherence during COVID-19: A Global Study Using Machine Learning Approach

#### Dylan Cohen

Power and Control in Disinvested Affordable Housing: San Francisco's Limited Equity Housing Co-operatives

#### Alberto Cuéllar Cerón

(See also S.M., Real Estate Development) Entrepreneurship as a Catalyzer of Housing Quality in Colombia: Tervi

### John Charles Devine

Civic Atlas: Open Government, Civic Tech, and Making Zoning Case Data More Accessible

#### Moctar Ndjido Fall

The Kids Table: A Report Conceptualizing Youth Empowerment and Food Planning Methods Through the Case Study of the Mattapan Food and Fitness Coalition

#### **Ruoming Fang**

(February, 2023) Application of Deep Learning to Land Cover Classification: Practice and Strategies

#### Abby Kaplan Fullem

Collaboration in Unlikely Spaces: The Characteristics and Promise of Successful Collaboration Among Affordable Housing and Environmental Conservation Proponents

#### **Rebecca Caroline Glasgow**

(See also S.M., Real Estate Development) A Case Study: LIHTC -to-Condo Conversion

Jonathan Pei-Ying Goh Welcome to Cambodia Town

Shivali Prakash Gowda Multifamily Affordable Housing Energy Retrofit Strategy for Richmond, CA

#### Shannon L. X. Hasenfratz

Memorable, Legible, and Accessible Cities: Co-Stewarding Historic Preservation and Public Transportation Agendas in Boston and Hong Kong

#### Mojolaoluwa Esther Idowu

(See also M. Arch., Course IV) Tabi. Tabbi. Tabique. Tabby

#### Melissa Isidor

(September, 2022) Crossroads: Exploring How Micro Organizations That Leverage Design Shape Urbanism Practice

#### Sarah Elizabeth Jeong

(February, 2023) Digital Tools and Design: Improving Participation in Policymaking

#### Sarah Emily Kalish

(See also M.B.A., Course XV) Awarding Equitably: a process design framework for city grantmakers

#### Ipshita Karmakar

Disaster Diplomacy: The Spatial Impact of International Reconstruction Aid in the Aftermath of the 2015 Gorkha Earthquake in Nepal

#### Gina Hanhee Lee

(September, 2022) Participatory Zoning: Collectivity, Contradictions, and the Politics of Inclusion in Neighborhood Planning

#### Sarah P. Lohmar

Strengthening Consumer and Retailer Responsibility for Textile Reuse and Donation in Cambridge and Boston

#### Jay Maddox

Any Port in the Storm: UK Freeports as a Typology of Governance

# Idélcia Rebeca Domingos Mapure

(September, 2022) Universities, Communities, and Service-Learning for Urban Development: Rethinking the Work of Kaya Clínica in Maputo, Mozambique

#### Tara Zarrin Mohtadi

Imagining and Building more Equitable and Democratic Systems: Lessons from Bay Area Organizations María Jimena Muzio Understanding Housing Supply under More Stringent Energy Efficiency Regulations

Yingu Pan Proposal for New Commuter Rail Service and TOD Master Plan along Guangzhou-Shenzhen Railway

#### **Akrisht Pandey**

(See also S.M., Real Estate Development) Decarbonizing Metropolises: Analyzing New York's LL97 and Boston's BERDO Net Zero Policies

#### Ana María Pérez Carrillo

Hacer la vida en Ciudad Verde: Bringing Participatory Action Research to Colombia's Affordable Housing Macro-Projects

#### Pratiwi Prameswari

Affordable Housing Provision for Workers Constructing Nusantara, the New Capital City of Indonesia

#### **Daniel Caesar Pratama**

Balancing Accessibility & Affordability in Transit-Oriented Development Projects, Case Study: TOD Tanah Abang, Indonesia

#### **Romy Saint Hilaire**

Black Art Planning: Exhibition Manifesto

#### Amelia C. Seabold

Learning by Doing: Transitioning Healthcare Technology Innovations from MIT Labs to Resource-Scarce Communities

Ilana E. Strauss How Cars Took Over America

#### Mikaela Strech

Co-Design for Equitable Adaptation: Site and Services Resiliency in Border Colonias

#### Ziyi Tang

(February, 2023) Impacts of Automated Buses on Travel Mode Preference for Different Income Groups and Density Areas Sharon Jacqueline Velasquez-Soto (September, 2022) Olympic Challenge: Designing Equity Into Mega-Events

Flavio Emilo Vila Skrzypek

The Story of Rubina: Lessons on Self-Governance in Peruvian Informal Settlements and Considerations for Community Land Trusts

#### **Elaine Anne Wang**

Hong Kong Time: Rethinking Sustainable Mobility and the 15-Minute City in the Context of Equity

#### **Devon Rose Winer**

Nature-Based Coastal Adaptation: A Comparative Assessment to Inform Effective Implementation

Lilian Xie (February, 2023) Art, Repair, and Spatial Justice in Boston's Chinatown and Seattle's International District

# Master of Science in Urban Studies and Planning

Course XI Department of Urban Studies and Planning

Christina Kimberley Last An Unsupervised Machine Learning Approach to Understand the Latent Characteristics Influencing Pedestrian Route Choice

# Master of Science in Media Arts and Sciences Program in Media Arts and

Sciences

**Justin Blinder** (September, 2022) Walk Deserts

#### Yubin Cai

(September, 2022) Wireless Sub-Cellular Sized Stimulators for Minimally Invasive Deep Brain Stimulation with High Spatiotemporal Resolution Valdemar Munch Danry

AI-Enhanced Reasoning: Augmenting Human Critical Thinking with AI Systems

Kevin Frederick Dunnell Latent Lab: Exploration Beyond Search & Synthesis

#### **Mengying Fang**

ColloGraphy: Designing Augmented Visual-Haptic Feedback Systems to Support Fine Motor Skill Learning

Dana W. Gretton

(September, 2022) Platforms for Biological Control

**Ayse Angela M Guvenilir** Modeling Gait Muscle-Reflexes Through Hindlimb Characterization in Rodents

Shivam Nitin Kajale

(February, 2023) vdW Magnetic Materials for Spintronic Applications

**Cassandra Elaine Overney** SenseMate: An AI-Based Platform to Support Qualitative Coding

**Junqing Qiao** (February, 2023) Methods for Ankle-Subtalar Joint Free-Space EMG Control

**Jocelyn J. Shen** Modeling Empathic Similarity in Personal Narratives

Miana Mae Chi Smith Recursive Robotic Assemblers

Jian Shen Tan (September, 2022) 996, Moyu, and Involution: Tech Work in the Age of Platform Monopoly

Kushagra Tiwary Discovering, Learning, and Exploiting Visual Cues

#### **Raechel Dionne Walker**

Liberatory Computing Framework: Empowering High School Students to Mitigate Systemic Oppression through Data Activism Xiajie Zhang (September, 2022) Towards Building a Pedagogical Agent That Supports Children's Exploration and Home Literacy Education

# Master of Science in Real Estate Development

Center for Real Estate Development

#### Nile Berry

(September, 2022) Modern Web Scraping and Data Analysis Tools to Discover Historic Real Estate Development Opportunities

#### **Gregory Paul Bonomo**

(February, 2023) The Effects of Government Legislation and Regulation in the 20th Century on the Evolution of Commercial Real Estate as an Investment Vehicle

#### **Daryl John Burton**

Novel Factors in REIT Pricing

#### **Christopher Taylor Carr**

(February, 2023) (See also M.B.A., Course XV) An Argument for the More Widespread Use of Ground Leases in the United States: How to Align Pertinent Interests and Strategically Implement on an Impactful Scale

#### Alberto Cuéllar Cerón

(See also M.C.P., Course XI) Entrepreneurship as a Catalyzer of Housing Quality in Colombia: Tervi

#### **Elaheh Demirchelie**

(September, 2022) Visual Communication of Key Concepts in Commercial Real Estate Analysis and Investment

#### **Raquel Ganitsky White**

(February, 2023) Reduced-Carbon Envelope Systems for More Sustainable Industrial Properties: A Cost Analysis of Reducing Greenhouse Gas Emissions

#### Emilio Gastelú Bárcena

(September, 2022) Modern Portfolio Theory Applied to Institutional Real Estate Investment

#### William Alexander Gietema III

Hedging a Falling Knife: Investing Through the Post Covid-19 Dallas-Fort Worth Housing Correction Utilizing Real Options Strategy

#### **Rebecca Caroline Glasgow**

(See also M.C.P., Course XI) A Case Study: LIHTC-to-Condo Conversion

#### **Gottfried Hans Hanschke**

(September, 2022) The Holistic Technology Impact Model

#### Zhiyuan Shawn Hu

Vertically Integrated Real Estate Investment, Operation, and Community Management

#### Juan Huicochea Mason

(February, 2023) ESG Leverage for TOD. General Framework and the Quantitative Underwriting, Governance, and Policy Case or Union Square

#### Ashley Katz

(September, 2022) Two Shades of Green: The Balancing of Affordable Housing Policy with Sustainability Regulation in New York City

#### **Taeyong Kim**

(February, 2023) A Proposal to Improve Korea's Project Financing Market Using Mixed Methods: Qualitative Approach and AHP Analysis

# Steven La

(February, 2023) Sourcing Cheaper and Greener Capital for Transit Oriented Developments

#### Qiaojun Lai

(February, 2023) Have the Private Real Estate Funds Out-Performed REITs on a Risk-Adjusted Basis Over Time?

#### Carson Christopher Land

(September, 2022) The Environment and Real Estate: How to Develop for the Future

#### Ravisara Lertpunyaroj

(February, 2023) How to Drive Thailand Developers Toward Net Zero: Lesson Learned from the Developers' Perspective and the Global Studies

#### Angela Miriam Loescher-Montal

(February, 2023) (See also M. Arch., Course IV) Nudging Permanence: Berlin's Regulations Meet Temporary Use

#### Mihir Manoj Menda

(September, 2022) An Analysis of the Cost-Benefit of Sustainable Transformation

#### **Reilly John Nuckel**

The Warehouse of the Future: The Impact of Automated Technologies in Industrial Assets

#### **Akrisht Pandey**

(See also M.C.P., Course XI) Decarbonizing Metropolises: Analyzing New York's LL97 and Boston's BERDO Net Zero Policies

#### **Benjamin Edward Perryman**

Design Thesis - ReStacks

#### **Rahul Sharad Raipelly**

(February, 2023) The Impact of Federal Reserve's Policies on the Residential Mortgage Markets (wtih C. Wamakima)

#### Shermika S. Roberts

(February, 2023) International Investments in Luxury Real Estate: An Evaluation of International Real Estate Investors and Developers Entering a Cross Continental Market

#### Luis Raul Rodriguez Escalante

(September, 2022) The 15-Min Concept and Its Relationship with the New Hybrid Culture: Perspective from NYC

#### Katherine Gramercy Salvatori

(September, 2022) Sea Level Rise and Commercial Office Markets in Southeast Florida

#### Himanshu Tiwari

(September, 2022) The Interconnection between Net-Zero Building Code and Rental Housing Affordability in Massachusetts

### Zachary Taylor Vaughn

(September, 2022) Building an Urban Life Sciences District in Midtown Cleveland: An Opportunistic Development Proposal that Requires Private and Public Collaboration

#### Corazon Wamakima

(February, 2023) The Impact of Federal Reserve's Policies on the Residential Mortgage Markets (with R.S. Raipelly)

#### **Francis Weiss**

(February, 2023) Increasing Workforce Housing in Miami

#### Soojin Whang

(February, 2023) The Impact of Autonomous Vehicles on Real Estate Housing Market in the United States

#### Zehao You

A Synergistic Partnership: Decision-Making For Green Energy Adoption In China Data Centers For Sustainable Business Development

#### Sherina Shan Ling Zhang

(February, 2023) Value Creation with Digital Real Estate in Web 3.0

#### Chen Zhao

(February, 2023) Integration and Implementation of ESG Strategies for Real Estate Companies

#### Yue Zhao

(September, 2022) RV Park and Mobile Home Park Investment and Development

# Master of Science (without specification of field)

#### Waleed Akbar

Med. Arts & Sciences (September, 2022) Battery-Free Wireless Imaging of Underwater Environments

#### Ido Calman

Med. Arts & Sciences Designing Novel DNA-Binding Proteins with Generative Deep Learning

### Laura Alexandra Chicos

Med. Arts & Sciences (February, 2023) Resting State Neurophysiology of Agonist-Antagonist Myoneural Interface in Persons with Transtibial Amputation

#### Jason Frank Hou

Med. Arts & Sciences An Implantable Piezoelectric Ultrasound Stimulator (ImPULS) for Selective Deep Brain Activation

#### Tzofi Malki Klinghoffer

Med. Arts & Sciences Towards Automated Design of Machine Perception Systems

# Kimaya Harippriya Manel Lecamwasam

Med. Arts & Sciences Pharmamusicology: Exploring the Impact of Music on the Physiology and Psychology of Anxiety Disorders and Well-Being

#### **David Preiss**

Med. Arts & Sciences (September, 2022) Motor Design and Control for Scalable Distributed Actuation

# Aastha Shah

Med. Arts & Sciences A Conformable Ultrasound Patch for Cavitation Enhanced Transdermal Cosmeceutical Delivery

# SCHWARZMAN COLLEGE OF COMPUTING

# <u>Master of Science in</u> <u>Computational Science and</u> <u>Engineering</u>

Program in Computational Science and Engineering

#### Katharine Elizabeth Fisher

Efficient Prediction of Quantum Chemical Properties with Multitask Gaussian Process Regression

#### Jessica Karaguesian

(September, 2022) Combining Density Functional Theory and Machine Learning for Optimization of Multicomponent Oxide Electrocatalysts

#### Julien Leonardo Luzzatto

Off-Lattice Kinetic Monte Carlo Methods for Long-Time Integration of Molecular Systems

#### Rashmi Ravishankar

(September, 2022) Photovoltaics Detection on Satellite Imagery Using Deep Learning and Remote Sensing

# Young Hyun Ryu

(September, 2022) Adaptive Stochastic Reduced-Order Modeling for Autonomous Ocean Platforms

#### Aditya Karthik Saravanakumar

Coupled Nonhydrostatic-Hydrostatic Hybridizable Discontinuous Galerkin Method

#### **Daniel Garner Sharp**

Estimating Static Parameters in State Space Models Using Transport Maps

#### **Corwin Wesley Stites**

Acoustically Controlled Remotely Operated Undersea Vehicles: A Quantitative Analysis

#### Songchen Tan

Higher-Order Automatic Differentiation and Its Applications

You Xuan Thung

(September, 2022) Applications of Computer Vision in Evaluating the Effects of New Housing Projects

# Zhengkai Tu

(September, 2022) Scalable Model for Reaction Outcome Prediction and One-Step Retrosynthesis with a Graph-to-Sequence Architecture

# Master of Science in Social and Engineering Systems

Program in Data, Systems, and Society

# Hussein Mozannar

Consistent Estimators for Learning to Defer to an Expert

# Master of Science in Technology and Policy

*Institute for Data, Systems, & Society* 

#### Miranda Nicolle Ahlers Empirical Evaluation of Social Network Sensors on Twitter During the Russia-Ukraine Conflict

#### Allison Bell

Bending the ICT Curve: Evaluating Options to Achieve 2030 Sector-Wide Climate Goals & Projecting New Technology Impacts

# Kali M. Benavides Exploring the Role of Hydrogen in

Decarbonizing Heavy Industry

# Alexa Reese Canaan

(See also S.M., Course VI) Benchmarking Residential Electricity Consumption: A Utility's Demand-Response Machine Learning Approach to the European Energy Crisis

#### Christina Chen

Inequities in Air Pollution Exposure in the U.S.: An Exploration of Disparity Metrics Across Geographic and Temporal Scales

# Thandolwethu Zwelakhe Dlamini

(September, 2022) Analysis of Top-Down Estimates of Mercury in the Atmosphere in the Context Mercury Emissions from Artisanal and Small-Scale Gold Mining in Latin America

#### Daniel Erkel

(February, 2023) (See also S.M., Course XVI) The Success of Emerging Space Actors: Effective Strategies in the NewSpace Era

#### Thomas Francis Galligani III

Remote Sensing, Inference, and Intelligence in the Information Environment

**Shabnum Kaur Gulati** Addressing Organizational Barriers in Moving from Policy to Code

#### Yiran S. He

How to Go Greene: The Complex Dynamics of the Ongoing Transition in Southwestern Pennsylvania

Ryan Thomas Hetrick

U.S. AI Policy - A Balancing Act

#### Joy Kelly Jackson

Exploring the Role of Race and Place in Residential Solar Photovoltaic (PV) Adoption

Alejandro Antonio Jimenez Jaramillo Developing Data Governance: A Comparative Analysis of Domestic Municipal Policies

#### Joonhee Kim

(February, 2023) (See also S.M., Course VI) Sensitivity of the Ozone Layer, Climate, and Public Health to Changes in the Location of Aviation Emissions

#### Peter Yu-Farn Liu

(See also S.M., Course XVI) System Dynamics Modeling and Analysis of Continuous Production Agility: Policies and Enablers for Resilient Satellite Constellations

#### Qingyang Liu

(See also S.M., Course VI) Unlocking the Potential of Hydrogen in Intermittent Electricity Systems: A Global Assessment of Levelized Cost of Hydrogen and Low Carbon Industrial Hub Profitabilty

#### Kevin Matthew Paeth

(February, 2023) Unassisted Humans Infer Personal Traits from Facebook Group Memberships: An Empirical Study with Implications for Employers and State Entities

### Allison Rosemary Shepard

Equity and Affordability Impacts of Building Performance Standards: A Case Study of New York City's Local Law 97

#### Nicole Xiaoyang Shi

Distributional Employment Implications of a Net-Zero Energy System in the Continental US by 2050

#### Maja S. Svanberg

The Economic Advantage of Computer Vision Over Human Labor, and Its Market Implications

#### Disha Trivedi

(February, 2023) Assessing Regional Sources of Atmospheric Polycyclic Aromatic Hydrocarbon Pollution and Associated Human Cancer Risk

#### Alejandro Jose Valdez Echeverria

Quantifying the Financial Value of Building Electrification Under Economic, Policy, and Technological Uncertainty

# Angelo Onorio Vozza III

Authentic Learning with Portfolios: A Combination that K-12 Education Needs

#### **Rui-Jie Yew**

A Systems-Level Analysis of Algorithmic Regulation

#### Jiao Zhang

(February, 2023) (See also S.M., Course VI) Improving Predictability of Wind Power Generation

# SCHOOL OF ENGINEERING

# Master of Engineering in Civil and Environmental Engineering

Course I-P Department of Civil and Environmental Engineering

#### Sabika Zehra Bharmal

Design and Optimization of Post Disaster Relief Structure

#### Austin Chen

Accelerating Topology Optimization Codes Using Mesh Refinement Continuation

#### Minghao Chen

Investigating the Influence of Interannual Precipitation Variability on Terrestrial Ecosystem Productivity

# Ana Cristina Fiallo Van Eenenaam

Short-Term Wind Direction Forecasting for Wind Farm Control

# Alexis Nicole Frankson

High-Throughput Photodegradation of Plastics

# Meriah J. Gannon

(February, 2023) Propagation from Meteorological Drought to Agricultural Drought Under Climate Change

#### Cyrian Henri Hallermeyer

Network Optimization-Based Approach for Identification of Illegal Trade in the Global Timber Supply Chain

#### Natasha K. Hirt

(See also S.B., Course IV) Generative Structural Design: An Algorithmic Approach to Synthesizing and Optimizing Steel Lateral Systems

#### Jade Kuuleialoha Ishii

The Influence of Current and Ripple Development on Seagrass Transplant Survival

#### In Him Lee

Nature Based Solutions for Coastal Defense: Wave Attenuation and Economic Analysis of Marsh-Fronted Seawalls

#### Chelsea Karina Medina

Comparing Optimized Perimeter Steel Bracing of Tall Buildings under Different Seismic Regions

#### Shailey Patel

Static Štability and Seismic Safety of Brunelleschi's Dome of Santa Maria del Fiore

#### William Sharpe

Investigating Aerosol Composition Using Low Cost Optical Particle Counters

#### Margaret Suji Indiana Smith

Barriers to the Use of Computational Tools for Embodied Carbon Reduction in Structural Engineering Practice

John Alan Stark Parametric Study and Early-Stage Structural Design for Tall Timber Buildings

#### Albertine Van Marcke Stock-Constrained Optimization of Partially Disassembled Trusses

Aurélien Vasseur Bendel Farm-Scale Water Management in Adaptation to Climate Change in Morocco

#### Karissa Jane Wenger (See also S.B., Course I-ENG) Historic Steel Beam Reuse: A Case Study of a 100-Year-Old Warehouse

Mollie M. Wilkinson Materials Characterization & Spectroscopy for a Methane Abatement Catalyst

**Colleen Marie Wolfe** Microneedles for Drug Delivery in Aquaculture

#### Haodi Xu

Comparing Phylogenetic and Deep Learning Methods to Predict Seed Dispersal Mode

# Xinyi Zeng

Understanding Soil Carbon Signatures from Hyperspectral Reflectance Data using Spectral Unmixing

# Master of Science in Civil and Environmental Engineering Course I

Department of Civil and Environmental Engineering

#### Majed Almubarak

Effects of Experimental Conditions on Fracture Research Using 3D Printed Materials

Nayeli Guadalupe Arellano Martinez (See also M.B.A., Course XV) Visual Sort Marker Digitization in Sort Center Operations

#### **Gregory Alan Cass**

(See also M.B.A., Course XV) Driving Growth Through Sales and Operations Planning, Inventory Management, and Supply Chain Expansion

#### **Beatriz Goncalves Klink**

Analytical Graphical Approach for Predicting Ground Conditions in TBM-Based Tunneling Construction

#### Scott Samuel Hungerford

(See also M.B.A., Course XV) Improving Throughput in an Aluminum Rolling Mill Using Modeling and Optimization Techniques

#### Peter Emanuel Jacobson

(See also M.B.A., Course XV) Optimization of Private Equity Investments for Industrial Carbon Emission Reduction

#### Miles David Kurtz (See also M.B.A., Course XV) Planogram Optimization in Support of Inventory Management

#### **Taylor Pano Lyberger** (See also M.B.A., Course XV) Towards Zero Defect Manufacturing in Electric Vehicle Battery Production

Kristen Anna Riedinger (September, 2022) A Survey of Superfund Chemicals in Massachusetts Farms

# Julie Marie Sarasua (See also M.B.A., Course XV) Network Optimization of a D2C

Network Optimization of a D2C Supply Chain Subject to Changing Cost Conditions and Consumer Preferences

# Lisa Grace Schleuter

(See also M.B.A., Course XV) Site Material Supply Chain Optimization

#### Jason Anthony Teno

(See also M.B.A., Course XV) Optimizing Apparel Pack Sizes Across Retailer's North America Network

Kaya Thomas Wilson (See also M.B.A., Course XV) Automated Guided Vehicles for Material Flow in Fulfillment Centers

#### Alura Danan Vincent

(See also M.B.A., Course XV) Scenario Planning Framework & Sensitivity Analysis for New Orthopedic Sets in the Spine Platform

# Joshua Ian Weisberg

(See also M.B.A., Course XV) Enhancing Manufacturing Performance to Plan with Predictive Analytics

# Master of Engineering in Advanced Manufacturing and Design Course II-P

Department of Mechanical Engineering

# Imane Ait mbiriq

(September, 2022) Remote Clinical Trials Operations: Supply Chain Management and Framework Development

# Hassan Husni Ajami

(September, 2022) Integration of Additive Manufacturing with CNC Sheet Metal Fabrication for Hybrid Fixtures: Design and Implementation of Sheet Metal Tooling Supports

# Henri J. Bataille

(September, 2022) From Prototype to Production: Focus on Manufacturing for Low Volume Production of an Industrial Milk Analyzing Device

#### **Russel Bradley**

Design and Manufacturing of Educational Fiber Extrusion Device and Smart Factory

### Andrew Thomas Cunningham

(September, 2022) Integration of Additive Manufacturing with CNC Sheet Metal Fabrication for Hybrid Fixtures: Design and Implementation of Powder Bed Fusion Tooling Surfaces

# Ibrahim Hassan El Khatib

(September, 2022) Integration of Additive Manufacturing with CNC Sheet Metal Fabrication for Hybrid Fixtures: Design and Implementation of Precision Assembly Interfaces

# **Rachael Michelle Flam**

(September, 2022) Laser Powder Bed Fusion Process Characterization: Design of Experiments for Dimensionally Accurate Thin Walls

# Benjamin Casey Graybill

(September, 2022) Framework to Accelerate Parameter Development for Laser Powder Bed Fusion

#### Maya Padmini Kota (February, 2023)

Using Optical Imaging and Image Processing to Verify Initial Layer Setup in a Laser Powder Bed Fusion Process

# Aviva Jesse Levi

(September, 2022) Design and Manufacturing of the Extrusion Assembly for an Advanced Process Control Educational Device

Rui Li

(September, 2022) Design and Manufacturing of the Filament Collection and Diameter Measurement Systems of Fiber Extrusion Device for Educational Purposes

# Xiaomeng Li

(September, 2022) From Prototype to Production: Product Development of a Modular Automated Milk Sampling Device for Conventional Dairy Farms

# Xuan Yi Lim

(September, 2022) Characterization of the Surface Roughness of Overhangs Manufactured by Laser Powder Bed Fusion Process Using Design of Experiments

# Ryan Lin

(September, 2022) Framework Development for Remote Clinical Trials: Assembly Process Design

# Jane Ellen Modes

(February, 2023) Optical In-Process Monitoring Tools for Laser Powder Bed Fusion: Verifying Powder Area Coverage of a Layer Setup

# Joyce Noh

Packaging Design for Remote Clinical Trial Operations

# Mohamed Ayman Othman

(February, 2023) Application of Machine Learning in Process Control in Optical Fiber Manufacturing

# Luis Fernando Rodriguez Cabrera

(September, 2022) Warehouse Automation: Improvements for the Precise Placement of Irregular Pallets

# Tanach Rojrungsasithorn

(September, 2022) Factory and Material Flow Design for Mass Production of an Advanced Process Control Educational Device

# Satvik Irappa Sabarad

(September, 2022) Correlating Displacement Sensors and In-Situ Optical Imaging for the Layer Management in a Laser Powder Bed Fusion Process

# Maelle Jade Sardet

(February, 2023) A Data-Driven Approach to Improve Optical Fiber Manufacturing: Focus on Core Deposition

# Nilay Sanjay Sawant

(September, 2022) Feasibility Study of Transfer Learning on LSTM Recurrent Neural Networks for Fiber Manufacturing Commercialization **Carly Madeleine Smith** (September, 2022) Remote Clinical Trial Operations: Patient Education for Medical and Wearable Device Use

# **Benjamin Thomson**

(September, 2022) From Prototype to Production: Scaling an On-Farm Milk Analyzing Device to Low Volume Production Using Design for Manufacturability and Assembly

## Jayna Wittenbrink

(February, 2023) Using Displacement Sensors to Characterize Critical Powder Layers in Laser Powder Bed Fusion

# Master of Science in Mechanical Engineering

Course II Department of Mechanical Engineering

#### Marwa AlAlawi

A Design and Fabrication Pipeline for Integrating Rotary Encoders into 3D Printed Mechanisms

# **Michael Whitney Aling**

(September, 2022) An Electrochemical Sensor Development Platform

#### Samair Alyassini

Laser-Induced Particle Impact Testing in High-Pressure Oxygen Environments

#### Nicolas Arons

(September, 2022) Human Interaction with Various Elliptical Constraints

#### Erik Nicholas Ballesteros

Supernumerary Robotic Limbs for Next Generation Space Suit Technology

#### Adam Harrison Barber

(See also M.B.A., Course XV) Modeling Passenger Electric Vehicle Charging Demand with Machine Learning Using Telematics Data and Temperature

## Zeina Nedal Barghouti

Preservation and Deployment of Biofertilizers to Mitigate Soil Phosphorous Loss from Agricultural Systems

## **Ryan Timothy Benz**

(February, 2023) A Silicate-Based Packaging Material for 3-D Heterogenous Integration of Microsystems

## Elizabeth Marie Bernhardt

Linking Amine Physicochemical Properties and Electrochemical Activity for Aqueous Reduction of Captured-State CO<sub>2</sub>

#### **Michael Bichnevicius**

Design and Characterization of a Pumped Circulation Loop for Molten Chloride Salt

Michael James Bishop Preventing Stern Tube Corrosion through Shipboard Cathodic Protection

#### Heather Genevieve Bowman

(February, 2023) Novel Treatment of Anal Fistulas and Endovascular Drug Delivery for Peripheral Arterial Disease

## **Casey Storm Bradt**

A Study of the Effects of Piston Secondary Motion on Piston Ring Conformability and Coolant Cavitation in Heavy-Duty Engines

# Antonia Delores Bronars

(September, 2022) Estimating Global Object Pose from Tactile Images

## Angel Bu

Investigating the Impact of Biochemical and Mechanical Stimuli on Motor Neuron Growth

## **Thomas Butruille**

Effect of 3D Architecture on Energy Dissipation during High-Speed Particle Impact

#### **Dylan James Carberry** Limpet Shell Growth: A Kinematic Framework

#### John Harris Cathcart IV

(See also Naval E., Course II) Integration and Implementation of Conceptual Design Tools for Naval Warships

#### Kelsey O'Brien Cathcart

(See also Naval E., Course II) Detrainment and Settling of Sediment in Turbidity Currents: A Study to Inform Deep Seabed Mining

### Avi Chatterjee

(See also S.M.(N.A.M.E.), Course II) Design and Modeling of Shipwide Navy Integrated Power and Energy Corridor Cooling System

#### Natalie Alyssa Chehrazi

(See also M.B.A., Course XV) Driving the Future of Long-Haul Trucking: Realizing the Potential of Battery Electric Vehicles through an Analysis of Financial and Environmental Impacts

## Jaehun Choe

(February, 2023) Semi-Autonomous Magnetic Manipulation for Endovascular Navigation

#### Shreya Dhar

(September, 2022) Design and Analysis of a Desktop Fiber Manufacturing Device

#### James Michael Donegan

(See also M.B.A., Course XV) Sustainability Analytics – Meeting Carbon Commitments Most Efficiently

## Camilo Duque Londoño

(See also Naval E., Course II) A Hydrogel Adhesive Marine Sensing System: Design, Mechanism and Applications

## **Kristen Marie Edwards**

(September, 2022) Accelerating the Design Process Through Natural Language Processing-Based Idea Filtering

# Seiji Hoshino Engelkemier

Opportunity for Long Duration Storage Technologies: Thermal and Compressed Air Energy Storage Nicholas Francis Esposito (See also M.B.A., Course XV) Make vs. Buy Optimization for Industrial Distribution and Manufacturing Company

**Dylan Steel Fife** Temperature and Thermal Noise Suppression for Precision Mechanical Experiments

**Peter Fisher** Fast Adaptive Laws for Adaptive Control Under Stochastic Disturbances

**Ryan Maximiliano Flores** (September, 2022) Material Handling for Continuous Lyophilization Process

Megan Camille Flynn Exploring Maneuvering Strategies for Heterogeneous Cooperative Navigation in Underwater Environments

**Michael Foshey** (February, 2023) Embroidered Multi-Modal Sensing Arrays for Tactual Perception

Avery Gilbert Fullerton (See also M.B.A., Course XV) Ship-Pack Optimization to Minimize Fulfillment Costs from Manufacturing to Customer

Lauren Marie Futami (September, 2022) Temperature Disparity Comparisons for Campus Heat Vulnerabilities

Francisco Javier Galindez de Jesus (See also M.B.A., Course XV) Integrated Energy Modelling Tool for Electric and Gas Infrastructure Decision Support

**Qiyun Gao** A Novel Device For the Treatment of Obstructive Sleep Apnea

Daniel E. González Díaz (February, 2023) Real-Time Self-Collision Avoidance for Dynamic Legged Robots Fiona Grace Gouthro (See also M.B.A., Course XV) Innovation Process at Omnichannel DCs Undergoing Shifts in Channel Mix

Ethan Logan Greene (See also M.B.A., Course XV) Development of a Student Operated Production Facility Using Discrete Event Simulation and Continuous Improvement

Anubhav Guha (September, 2022) AC-RL: A Framework for Real-Time Control, Learning, and Adaptation

**Toni-Rose Maico Guiriba** (See also M.B.A., Course XV) Improving Supply Chain Resiliency through Aseptic Connector Alignment and Standardization

**Menglong Guo** (September, 2022) Design of Fingertip Sensors and 7-Dot Hands for Robotic Manipulation

**Zoe L. Hinton** (See also M.B.A., Course XV) Enhanced Digital Capability through the use of Simulation in Footwear Product Creation

Jacob Tyler Hopkins (See also M.B.A., Course XV) Performing Actionable Evaluations of Sustainability Investments

**Ori Hoxha** (See also M.B.A., Course XV) External Network Manufacturing Canacity Design and Progressment

External Network Manufacturing Capacity Design and Procurement in the Pharmaceutical Industry

Mariam Elisabeth Ibrahim (See also M.B.A., Course XV) Developing a Data-Driven Strategy for In-Process Quality Assurance for Additive Manufacturing

Aman Jalan (February, 2023) Neural Closure Models for Chaotic Dynamical Systems Justin Leon Jiang (See also M.B.A., Course XV) Digital Supply Chain Connectivity and Capacity Analysis for Strategic Production Planning in Biosurgery Oxidized Regenerated Cellulose

Kyle Siyu Jiang (September, 2022) Design Guidelines for Sulfonyl/ Sulfamoyl Fluoride Additives to Modulate Lithium Anode Coulombic Efficiency

**Tal Joseph** Enhancing Gas Absorption with Nanoengineered Surfaces for Bubble Manipulation

Alex Kachkine Additively Manufacturing High-Performance, Low-Cost Electrospray Ion Sources for Point-of-Care Mass Spectrometry

Zain Karsan (See also S.M.Arch.S., Course IV) Liquid Metal Printing

Samantha Violet Killy (September, 2022) Towards Active Object-Based Navigation

**Hyeonseok Kim** 3D-Printed, Internally Fed Electrospray Thruster

**Benjamin C. Koenig** Enabling Efficient Uncertainty Quantification of Turbulent Combustion Simulations via Kinetic Dimension Reduction

Jomi Saxl Kramer (See also M.B.A., Course XV) Outside Inside, Inside Around: Leveraging External Innovation Through Strategic Corporate Venture Capital Investment

Matthew Thomas Kruse (See also S.M.(N.A.M.E.), Course II) Preliminary Shipboard Layout of Navy Integrated Power and Energy Corridor (NiPEC)

## Zachery Wolfgang Kutschke

Design and Commissioning of a Hybrid Additive Manufacturing System Combining Inkjet Deposition and Laser Powder Bed Fusion

## Tioga Jasper Laird Benner

Design of a Portable Device to Detect Perand Polyfluoroalkyl Substances (PFAS) in Water

#### **DoYoon** Lee

Layer-by-Layer Single-Crystal Two-Dimensional Material Growth by Geometric Confinement

#### Sheng-Hung Lee

(September, 2022) (See also S.M., Engineering and Management) Human-Centered System Design for an Aging Population: An Experimental Study of Footwear Design

#### Chenyang Li

(September, 2022) Thermodynamic Modeling and Design of High-Performance Adsorption-Based Atmospheric Water Harvesting Devices

#### Heyi Li

Towards Low-Cost Context Awareness on Smart Shelving Using Passive UHF RFID Infrastructure

## Mo Li

(February, 2023) Experimental Investigation of the Blowby Effect on the Three-Piece Oil Control Ring and Subsequent Oil Transport in Transient Engine Working Conditions

## Xuanhe Li

(September, 2022) Investigation of Thermo-Chemo-Mechanically Coupled Phenomena in Frontal Polymerization

## **Emily Lin**

High Energy Density Entrainment-Based Catalytic Micro-Combustor for Portable Devices in Extreme Environmental Conditions

## Qian Lin

Path Planning for Trajectory Guided Freehand Ultrasound Scan

#### Lisa Liu (See also M.B.A., Course XV) Model-Based Technology Roadmapping of Fuel Cells in Sustainable Aviation Applications

**Kyle J. Lux** (See also M.B.A., Course XV) Identifying Bottlenecks through Process Consistency in High-Capacity Automated Manufacturing

#### Naomi Lana Lynch Flexure-Based Devices Enable Precise Quantitative Monitoring of Muscle Performance

**Uriel Magaña-Salgado** (February, 2023) Methods for Physiologic Tremor

Methods for Physiologic Tremor Characterization, Mitigation, and Modeling

#### **Crystan Symone McLymore** Real-Time Radiation Detection within the Gastrointestinal Tract

## Igor Mogilevsky

(February, 2023) (See also S.M.(N.A.M.E.), Course II) Shipping Decarbonization through Sea Route Optimization & Vortex Generator Resistance Reduction

# **Daniel Patrick Moriarty**

(September, 2022) (See also S.M., Course III) Effects of Strain on Activated-Aluminum-Water Reactions

## Madison Christine Myers

(See also M.B.A., Course XV) On-Site Hydrogen Production via Distributed Methane Pyrolysis

Joushua G. Padilla Characterizing the Thermal Behavior of Pyrolytic Graphite Sheets (PGS) at Low Interface Pressures

#### **Anjali Parashar** Accelerated Algorithms for Constrained Optimization and Control

Palak B. Patel (September, 2022) Experimental Nanoengineering of Multifunctionality into an Advanced Composite Laminate

## Isabelle Claire Patnode

Protecting Our Investment: Solving Fast Response Cutter Corrosion

#### Linda Pratto

Internal Combustion Engine Performance using Aluminum as Fuel

#### Jiajie Qiu

Active Vibration Suppression for Wafer Transfer Systems in Semiconductor Fabrication Plants

#### Diego Alonso Quevedo Moreno

A Soft Robotic System for Mechanical Assistance to the Diaphragm

#### **Madison Reddie**

Redesigning Diabetic Foot Risk Assessment for Amputation Prevention in Low-Resource Settings: Development of a Purely Mechanical Plantar Pressure Evaluation Device

## Preston W. Rhodes

Characterizing Hydrodynamic Interactions of Underwater Vehicles in Close Proximity Using an Identical Ellipse Pair

#### Jean Carlos Roman

Single Degree of Freedom Solid Rotar Velocity Control Induction Drive

## **Edvard Ronglan**

(See also S.M., Course VI) Bayesian Optimization and Cartesian-Grid Simulations for Artificial Reef Design

#### **Darron Robert Sandifer**

(See also M.B.A., Course XV) Continuous Improvement Framework for a Multi-Model Production Line

# Alejandro R. Sevilla

(February, 2023) Elucidating Concentration and Temperature-Dependent Energy Limitations of a Novel Fluorinated-Organosulfur Catholyte for Li Primary Batteries

## Zhiyuan Shu

Development and Application of Elastohydrodynamic Lubrication Model for Piston Pin

## Allison Rhett Smedberg

(See also M.B.A., Course XV) From Bench to Bucks: An Approach and Case Study in Scaling Additive R&D Technologies within the Aerospace Industry

## Brandon Drumright Snow

Modeling Microvoid Localization with Explicit Finite Element Analysis

#### Jonas Sogbadji

Impact of Lesion Preparation-Induced Calcium Fractures in Vascular Intervention for Atherosclerotic Disease: In Silico Assessment

#### Lucas Kistner Stone

(See also Naval E., Course II) Oscillating Energy Harvester for UUV Applications

Rachel Sun Acoustic Metamaterials at the Microscale

#### Jonathan N. Tagoe

Design and Testing of a Respiratory Simulator for the Optimization of Soft Robotic Assistive Breathing Devices

#### Annika Elizabeth Thomas

Innovative Structural and Mechanical Satellite Systems

## Max T. Thomsen

Local Shape Estimation Using Mechanochromic Structurally-Colored Tactile Sensors

# Megha Harishree Tippur

(September, 2022) Design and Manufacturing Methods for a Curved All-Around Camera-Based Tactile Sensor

## Jacob Andrew Tomasovic

(See also M.B.A., Course XV) Manufacturing Integration: Managing Throughput and Organizational Change

Jimmy T. Tran Mapping the Electrodialysis Architecture Design Space by Determining Optimal System Configurations for Different Production Outputs

# Jillian Marie Uzoma

(See also Naval E., Course II) Predicting Interactions Between Energy Saving Devices on Surface Ships

## Lois Amelia Wampler

(February, 2023) A Doppler Radar Lock-In Demodulation Algorithm for Machine Vibration Sensing

# Mallory M. Whalen

High-Precision Stress Measurement in Thin Films for X-Ray Mirrors

## Jadal Nyles Williams

A Koopman-Based Reduced-Order State Observer for Visual Localization of Robots

## **Robin Willis**

Design Change Propagation in Complex Systems: Industry Processes and Perceptions

## Alexander Joseph Wunderlich

(See also Naval E., Course II) Feasibility Study of a Linear Generator Wave Energy Converter With Adaptive Bistable Control

# Haiqian Yang

(September, 2022) Spatial Organization of Multicellular Living Systems

## Ahmad Zakka

Measurement and Analysis of Lubricant Oil Consumption in a Single Cylinder Hydrogen IC Engine

# Master of Science in Naval Architecture and Marine Engineering Course II Department of Mechanical Engineering

**Avi Chatterjee** (See also S.M., Course II) Design and Modeling of Shipwide Navy Integrated Power and Energy Corridor Cooling System

# Matthew Thomas Kruse

(See also S.M., Course II) Preliminary Shipboard Layout of Navy Integrated Power and Energy Corridor (NiPEC)

## Igor Mogilevsky

(February, 2023) (See also S.M., Course II) Shipping Decarbonization through Sea Route Optimization & Vortex Generator Resistance Reduction

# Master of Science in Materials Science and Engineering

Course III Department of Materials Science and Engineering

## Camille Catherine Farruggio

Analysis and Modulation of Manufacturing Conditions for Improved Cell Therapeutic Efficacy

## Christopher John Karpovich

(See also S.M., Course VI) Machine Learning Enabled Inorganic Synthesis Planning and Materials Design

## **Daniel Patrick Moriarty**

(September, 2022) (See also S.M., Course II) Effects of Strain on Activated-Aluminum-Water Reactions

## Serita Lynne Sulzman

Processing and Thermal Stability of Nanocrystalline Ag-Cu Alloys

# Master of Engineering in Electrical Engineering and Computer Science Course VI-P

Department of Electrical Engineering and Computer Science in conjunction with the Schwarzman College of Computing

# Liam James Ackerman

(September, 2022) Leveraging Engineering Expertise in Deep Reinforcement Learning

# Ikechukwu Daniel Adebi

Landslide Susceptibility Prediction Adaptive to Triggering Events So Hee Ahn Multimodal Data Fusion for Deep Learning Applications in Intracoronary Image Segmentation

Raul A. Alcantara Castillo Frientelligent: Autonomous Multi-Agent Collaboration, Competition, and Interaction Curriculum for Young Children

**Obada M. Alkhatib** (September, 2022) Sampling Methods for Fast GNN Training

Harrison M. Allen (September, 2022) NeuroModular - A Modular Backend for Fiber-Based Wireless Bioelectronic Interfaces

**Connor W. Anderson** (September, 2022) Implementation of Vision-Based Autonomous Navigation in Pedestrian Environments

**Joshua C. Ani** (February, 2023) Unsimulability, Universality, and Undecidability in the Gizmo Framework

**William A. Archer** (February, 2023) Visual Charting of Classified Audio Data

**Riya Arora** (See also S.B., Course VI-3) Understanding Human Perception Through Mooney Faces

María Ascanio Aliño (See also S.B., Course VI-3) Testing for Subtle Cognitive Impairments in a Clinically Informed iPad Platform

Nithya Sri Attaluri (See also S.B., Course VI-2) A Hardware Accelerator for Sparse Matrix Multiplication and Sparse Convolution

**Reginald Davis Best, Jr.** Building a Dataset and Developing a Video Event Classifier for Football **Christopher J. Blazes** (September, 2022) Algorithmic Approaches to Interfacing Different Materials Using Inkjet Multi-Material 3D Printers

**Grace Cai** (February, 2023) (See also S.B., Course VI-2) Geometry-Sensitive Swarm Algorithms

**Paul G. Calvetti, Jr.** Optimizing the Allocation of Capital among Offensive Positions in the NFL

**João Lucas Camelo Sá** Applications of Deep Learning to Financial Time Series Forecasting

Michael R. Cantow ThoughtLine Web Server for Mental Health Wellness and Psychotherapy

**Emily I. Caragay** Broken Expectations, Broken Concepts: A New Diagnosis of Dark Patterns

**Grecia Castelazo** (September, 2022) Prospects for Quantum Equivariant Neural Networks

**Colin P. Chaney** (September, 2022) Long Term Measurement of Bandgap Voltage and System Level Integral Non-Linearity Drift

Christopher W. Chang (September, 2022) S\*: Geometric Multimodal Trajectory Optimization via Apex Interpolating Spiro Splines

Ashley Chen Privacy-Preserving Natural Language Dataset Generation

**Jeffrey T. Chen** (September, 2022) SafeGENIE: Secure and Federated Linear Mixed Model Association Tests

Shiqi Chen Bi-Directional Flyback Converter Circuit Design for Flapping-Wing Microrobots Valerie K. Chen Grid Inference and Partial Scan Registration for Intelligent Collaborative Robot Systems

William Chen Applications of Large Language Models for Robot Navigation and Scene Understanding

Henry Y. Cheung (February, 2023) Computing Fibers: Architectures and Applications

**Prem Chintalapudi** Reducing Compilation Latency in the Julia Programming Language

Jung Soo Victor Chu Automated Pipelines for Information Extraction from Semi-Structured Documents in Structured Forma

John B. Cook (February, 2023) An Effective Platform for Assessing Cognitive Health

Alex C. Cuellar (September, 2022) Inference and Task Planning over Spatially Complex Problems

Howard DaCosta III Configurable Online Multi-Tiered Storage in Database Management Systems

Haimoshri Das Improving Segmentation and Registration of the Placenta in BOLD MRI

Michael Ziyang Diao (See also S.B.,Course XVIII) Proximal Gradient Methods for Gaussian Variational Inference: Optimization in the Bures-Wasserstein Space

Alejandro Daniel Lino Diaz (February, 2023) Monolithically 3D-Printed, Quadrupole Mass Filter for High-Precision, Compact, CubeSat Mass Spectrometry

Alexandra Dima (February, 2023) GSTACO: A Generalized Sparse Tensor Algebra Compiler Laura N. Dodds (September, 2022) A Portable Handheld Fine-Grained RFID Localization System with Complex-Controlled Polarization

### Yun Shwe Eain

Understanding Impact of Life Experiences on Performance and Learning Behavior in an Introductory Computer Science MOOC

Gabrielle Edyt Ecanow Debug Tutor: Automated Deliberate Debugging Practice for Undergraduate Programmers

Daniel G. Edelman Energy Requirements of Computer Vision Training

**Tareq El Dandachi** (February, 2023) Efficient Simulation of Large-Scale Superconducting Nanowire Devices

**Dean Fanggohans** (See also S.B., Course VI-3) Defio: Instance-Optimized Fusion of AWS Database Services

Amir Farhat (September, 2022) Increasing DoS-Resilience for Cross-Protocol Proxies

**Manuel Alejandro Favela** (September, 2022) Investigating Different Image Representations for Image Retrieval

Hannah Margaret Field (February, 2023) Magnetothermal Modulation of Nerve Growth

Alisha Fong NDF-Based API for Human-Assisted Language Planning (HaLP)

Reed A. Foster Large Scale Superconducting Circuits with Nanocryotron Logic

Sebastian L. Franjou (September, 2022) Arty: Expressive Timbre Transfer Using Articulation Detection for Guitar Kevin Frans (See also S.B., Course VI-2) Generalizable Reinforcement Learning via Open-Ended Task Generation

**Stephanie Fu** More Than Meets the Metric: A New Measure for Perceptual Similarity

**Evan P. Gabhart** (September, 2022) Quantized Guessing Random Additive Noise Decoding - A Universal Quantized Soft-Decoder

**Jenny Leixin Gao** (February, 2023) Learning Z-Order Indexes with Dynamic Bit Allocation

**Ricardo M. Gayle, Jr.** Potentials with Halide in LAAMPS

**Jamie Geng** Characterizing the Aging of InP Quantum Dot LEDs

Irin Ghosh (September, 2022) Characterizing the Structure of Transmission Matrix in Lower Dimensions

Shinjini Ghosh Advancements in Word Alignment: Introducing a Novel Count-Based Subword Model Alongside Neural and Ensemble Models

Miguel Gomez-Garcia Citadel: Implementing Side-Channel-Resistant Enclaves with Secure Shared Memory

Luka Govedič Improving the Performance of Parallel Loops in OpenCilk

**Pawan Goyal** Private Information Retrieval with Access Control

Veronica M. Grant Proliferated Low Earth Orbit (pLEO) Satellite Constellation Handover Cost Analysis **Peyton S. Greve** Estimating a Baseball Hitter's Bat Speed Using One Camera

Aayush Gupta (September, 2022) Unique Noninteractive Zero Knowledge Nullifiers and Novel Zero Knowledge Proofs of Wifi Connectivity

**Dagmawi Samuel Haile** Liquid News - A Semantic-Relational Model for Enhanced Understanding

Julian S. Hamelberg Creative Applications and Implications of MIDI 2.0

Max R. Hardy Laser Intensity Agnostic Stabilization of Interferometer for Optical Neural Networks

**Frances R. Hartwell** (February, 2023) Zephyr: A Data Centric Framework for Predictive Maintenance of Wind Turbines

**Tommy S. Heng** Bridging the Gap: Designing Accessible Industrial Robotics UIs for Non-Technical Users with Concept Design

**Carlos Gustavo Hernandez** Software Library for Generative Model Applications

William Hu (September, 2022) Variational Autoencoders for Discovering Influential Latent Factors

**Kuan Wei Huang** (February, 2023) Unified Masked Autoencoders

**Tiffany Y. Huang** Explicit Regularization for Overparameterized Models

**Raymond Minor Huffman** (February, 2023) Julia on WebAssembly Neha S. Hulkund (See also S.B.,Course VI-3) Improving OOD Detection with Transformation Neighborhood Marginalization

## Christian Z. Hwa

(September, 2022) Single-Cell Differential Splicing of Alzheimer's Disease in 1.9 Million Cells Across 416 Individuals

### Chiho Im

Learning the Language of Antibody Hypervariability Through Biological Property Prediction

Assel Ismoldayeva

(February, 2023) Dissecting Ancestry-Biased Germline Effects in Lung Cancer

Lay Jain Unsupervised Representation Learning from Intravascular Ultrasound Videos

Sandy Jean-Charles (February, 2023) Sensemaking: An Analysis of Participatory and Automated Methods

#### Meagan R. Jens

Baba is AI: A Grounded Benchmark for Compositional Generalization in Dynamic Rule Systems

#### Sharon Jiang

Conceptualizing Machine Learning for Dynamic Information Retrieval of Electronic Health Record Notes

Caroline Linda Jin

A Measurement Tool for Videoconferencing User Experience

#### Edward H. Jin

(See also S.B.,Course V) Predicting Chemical Reactions at the Mechanistic Level through Deep Reinforcement Learning

Kathryn J. Jin ClickTrails: Enhancing Web Navigation with Usage-Based Stylization of Clicked Web Page Elements Roger Jin (September, 2022) Unsupervised Translation between scRNA and scATAC

Suzanna A. Jiwani (February, 2023) Risk-Aware Neural Navigation for Interactive Driving

**Cooper R. Jones** Distributed Monte Carlo Tree Search With Applications to Chip Design

Shulamit H. Jones "Customization is Key": Four Characteristics of Textual Affordances for Accessible Data Visualization

Ioannis Kaklamanis Fault Tolerant Broadcast in Bandwidth-Constrained Networks

Sohini Kar Simulating Economic Experiments Using Large Language Models: Design and Development of a Computational Tool

Matthew T. Kearney (See also S.B.,Course VI-2) Transformer Model Neuron Explanations

Benjamin Burton Kettle Privilege-Separating Embedded Applications Using WebAssembly in the Plat FIDO2 Security Key

## Min Thet Khine

Causal Analysis Experiments on Log Extraction and Processing for Causal Insights

**Quang Phuc N. Kieu** (September, 2022) Design and Fabrication of an Electric-Field Induction Motor

**Jin Woo Kim** (February, 2023) Restoring Eye Contact in Video Conferencing

Nathaniel J. Kim A Virtual Reality System for Training Orchestra Conducting **Cole Thomas Kingston** Measuring Grit in NFL Cornerbacks Using Statistical Analysis

**Daniel A. Klahn** Implementation of an Autonomous Surface Vehicle for Aquaculture

**Aleksandar Krastev** (See also S.B., Course VI-3) A Tensor Compiler for Simple and Efficient Fully Homomorphic Encryption

Sophia Seoyoung Kwon Toward Improved Non-Interactive Proof Systems

Abby A. Lambert Identifying Objects' Inertial Parameters with Robotic Manipulation to Create Simulation-Ready Assets

Anna K. Landler (February, 2023) Capacity Expansion Modeling of Hydrogen and Electricity with Sector Coupling in New England

Jay T. Lang lab-bc: A Serverless Computing Platform for MIT Educators

Joie Y. Le (February, 2023) Profile Creation with Topic Modeling and Semantic Analysis from Conversations about COVID-19 among U.S. Older Adults

Mario Leyva, Jr. Refactoring Tutor: An IDE Integrated Tool for Practicing Key Techniques to Refactor Code

Amanda Li (February, 2023) BP-tree: Overcoming the Point-Range Operation Tradeoff for In-Memory B-trees

**Amber M. Li** (February, 2023) Active Predicate Learning

Andrea Yingjun Lin Intersection Attacks on Discrete Epochs Daniel S. Liu Decision Transformer-Based Traveling Salesman Tour Generation

**Donald D. Liu** Network Effect on Teams, Team Processes, and Performance

Isabelle Y. Liu (September, 2022) Experiments to Improve Behavior of Electrowetting Surfaces in Microhydraulic Actuators

Kevin J. Liu (See also S.B.,Course XVIII) Truthfulness in Large Language Models

#### Kyle Yijie Liu

(See also S.B., Course VI-3) Inference of Cyber Threats, Vulnerabilities, and Mitigations to Enhance Cybersecurity Simulations

Richard T. Liu

MakeMu: An Online, Cross-Platform, Collaborative Web Application for Music-Making

## David Lu

(See also S.B., Course VI-3) Understanding the Robustness of Vision Models and Humans to Occlusion-Based Corruptions

**Helen Lu** Investigating the Effect of Data Augmentation on Conformal Prediction

## Zhezheng Luo

(February, 2023) On the Expressiveness and Generalization of Hypergraph Neural Networks

Lilian Luong Learning Refinement Cost Estimators for Bilevel Planning

#### Sean Mann

(See also S.B., Course VI-3) SAMoSSA: Multivariate Singular Spectrum Analysis with Stochastic Autoregressive Noise

#### Xiao Mao

(September, 2022) Dynamic Programming Meets Fine-Grained Complexity Lingjie Mei (September, 2022) Falcon: Fast Visual Concept Learning by Integrating Images, Linguistic Descriptions, and Conceptual Relations

**Praneet Mekala** (See also S.B., Course VI-3) Complex System Simulation Framework for Shared Augmented Reality Applications

Amelia A. Meles Case Studies in Differential Privacy for Computer Networking Research

Kelsey N. Merrill zk-Sigstore: System for Anonymous Certificate-Based Software Signing

Adrian Leonardo Meza (February, 2023) Creating Interactive Experiences and Visualizing Computer Science Concepts to Aid Student Understanding

Yosef E. Mihretie (September, 2022) Automatic Exploit Generation for Cross-Language

Tamara Mitrovska Implementing BREeze - a High-Performance Regular Expression Library Using Code Generation with BuildIt

**Abhishek Mohan** (February, 2023)

Development of an End-to-End Pipeline for Custom Key-Value Extraction from Commercial Invoices

**Felipe Monsalve** (September, 2022) Building an Open Source Platform for Forensic Medical Documentation

Manuel Morales Two Case Studies on Indoor Air Quality in New York City Decarbonized Affordable Housing

**Fischer Jay Moseley** Manta: A Tool for On-Chip Debugging of Digital Logic **Brandon T. Motes** (September, 2022) Automated High Throughput Characterization of Perovskite Photovoltaic Devices

José Antonio Muguira Iturralde

(February, 2023) Visibility Aware Navigation Among Movable Obstacles

#### Pranav M. Murugan

Efficacy of Antibody and T cell Therapies for Highly Mutable Viruses like Human Immunodeficiency Virus

#### Philip Murzynowski

(September, 2022) Optimizing Graph Neural Network Training on Large Graphs in a Distributed Setting

Anthony D. Nardomarino

Modernized Power Converter Development Platform for Educational Applications

**Umarbek Sheraliyevich Nasimov** Averaging Neural Networks

#### Hesham Nawaz

Causal Machine Learning to Discover Biochemical Determinants of Physical Fitness

## Diogo C. Netto

(February, 2023) Assessing and Improving Garbage Collection Performance in the Julia Programming Language

Elaine Ng (September, 2022) Design of High-Performance Pie

Design of High-Performance Piezoelectric Transformer-Based DC-DC Converters

My Uyen Tran Nguyen

Application Considerations of Multiphase Monolithic Buck Regulators with Coupled Inductors

Anne Ouyang (See also S.B., Course VI-3) Understanding the Performance of Transformer Inference

### Carol Pan

Design and Performance Analysis of Frequency-Shift Keyed Transmitter using Rapidly Tunable Lasers

**Shreya L. Pandit** (February, 2023) Modeling Motivation

# Fjona Parllaku

(September, 2022) Longitudinal Biomarkers for Onset Dementia Diagnosis: The Case of Emotion and bvFTD

Lisa R. Peng (September, 2022) Towards Self-Supervised Object Representations and 3D Scene Graph Based Navigation

Vishnu S. Penubarthi Multiple-Path Generation to Improve Autonomous Vehicle Planning

**Daniel P. Pilsbury** Evaluating Combinations of Player Types in the NBA

Megan Prakash

Culturally-Integrative Encoding: A Human-Computer Interaction Approach to Cultural Learning Interfaces

## Sonia Purohit

AI Commentator: Narrating Sports Games through Multimodal Perception and Large Language Models

**Xiaoran Qu** (See also S.B.,Course XVIII) Fair Selective Regression

**Grace Anne Quaratiello** An Introductory Low-Level Programming Course for Students with a Python Background

Nikola Raicevic (September, 2022) DPR Cluster: An Automated Framework for Deploying Resilient Stateful Cloud Micro-Services

Nicholas R. Ramirez Leveraging Basis Alignment to Create a Generalized Multi-Relational Graph Convolution Network in the Federated Setting

#### Anushka Ray

(February, 2023) Machine Learning Based Flood Risk Modeling Using Features from Satellite Data, Socioeconomic Datasets, and Geographic Information

## Nikhil R. Reddy

(September, 2022) Optimizing Parallel Performance with Work and Span in the OpenCilk Compiler

Jordan S. Ren

Simulating Real-World Human Activities with VirtualCity: A Large-Scale Embodied Environment for 2D, 3D, and Language-Driven Tasks

**Rene D. Reyes Bardales** BURLAP: Bits of Useful Randomness Enable Learning with Adjustable Privacy

**Osvy Rodriguez** (September, 2022) Pushing the Limits of RF and Underwater Backscatter Systems

**Sol Estrella Rodríguez Garnica** SparkSim: A Causal Approach to Distributed Scheduling

Hayden MacKenzie Rome The Space Race: Progress in Algorithm Space Complexity

Victor Rong (See also S.B.,Course VI-3) How to Pack Anything

Aristofanis Rontogiannis (February, 2023) B-Cell Epitope Prediction for Improved Antibody Docking

Dana Rosenfarb (September, 2022) Decoding Neural Processing of Linguistic Features from Large-Scale Intracranial Recordings and Naturalistic Language Stimuli

**Berke Saat** (September, 2022) Visual Inertial Odometry with Sparse Deep Learning

## Pasapol Saowakon

Building and Evaluating Cancer Prescreening Models with Electronic Health Records

**Gila Rachel Schein** Custom Electrical Impedance Tomography Forward Models for Muscle Rehabilitation and Radiation Monitoring

Kliment Serafimov

(September, 2022) HyperSketch: Language for Implementing Generic Neuro-Symbolic Program Synthesizers

Georgia E. Shay

Modular Arithmetic Tensor Multiplication Hardware Accelerator for Homomorphic Operations in Private Information Retrieval

**Jeffrey J. Shen** A Generous Interface for the Discoverability of Text Collections

**Peyton Douglas Shields** Hybrid Testing: Combining Static Analysis and Directed Fuzzing

Mihir A. Singhal Locally Computing Edge Orientations

**Ria V. Sonecha** Geometric Approaches for 3-Dimensional Shape Approximation

Suraj Sai Srinivasan (September, 2022) Towards Morphology-Agnostic Control for Soft Robots

Logan S. Stafford (September, 2022) Inductive Cell Voltage Balancer and Model of Battery Cells and Cell Balancers

**Jocelin Su** (See also S.B.,Course VI-3) Unsupervised Compositional Image Decomposition with Diffusion Models

Viktoriya Tabunshchyk Learning to Code through APIs in App Inventor **Grace Wen-Lian Tang** (See also S.B., Course VI-2) Designing an Efficient Power/Control System for a Network of Piezoelectric Speakers

Krittamate Tiankanon Improving Ink Feedback Control System for Vision Controlled Jetting 3D Printer

**Britney A. Ting** Interpretable Modeling of Immunotherapy Response Factors

**Deborah Cheron Torres** An Algorithm for Characterizing Context-Governed Speech Production Patterns

**August Trollback** (February, 2023) Continuation Stealing in Julia

Herbert M. Turner IV A Machine-Learning Driven Framework for Plasma Disruption Detection in Tokamaks

Savannah B. Tynan (September, 2022) Using Machine Learning Techniques on Satellite Data to Predict the Effect of Urbanization on Avian Biodiversity

Yuria Utsumi (September, 2022) Explaining Machine Learning Models for Early Detection of Pregnancy Risk

Saaketh Vedantam (See also S.B.,Course VI-3) Probing Language Models for Contextual Scale Understanding

Ashika Verma (September, 2022) Transformation Tolerance and Demographic Robustness of Machinebased Face Recognition Systems

**Eli Villa** Recreating Past Environments in Virtual Reality

Daniel C. Vuong 3D Segmentation for Fiber Break Analysis of Carbon Fiber Reinforced Polymer Tomograms Ellen F. Wang Capturing Worlds of Play: A Framework for Educational Multiplayer Mixed Reality Simulations

**Geoffrey Wang** Time-Optimal Re-planning of Quadrotor Trajectories

**Lilian Wang** (September, 2022) On-Device Machine Learning for Wound Screening

Margaret X. Wang Non-Invasive Vision-Based Measurement of Hand Kinematics and Interaction

**Collin Robert Warner** Implementing a Persistent Offline Cache Improving Time to First Execution (TTFX) of GPU Code in Julia

Megan Jian Wei Composing Visual Relations with Composable Diffusion Models

Anna E. Weinstein Designing Student Interactions to Explore Systems Thinking in Augmented Reality

Kathryn T. Wicks Coevolving Cybersecurity Adversaries for Industral Control Systems in Failure-Prone Environments

**Christian T. Williams** Simulation and Experiments for Lightning: A Photonic-Electonic SmartNIC

Benton B. Wilson (September, 2022) LightShow: Abstract Representations of Music Lighting In Python

Anna Jiayi Wong Knowledge Distillation for Interpretable Clinical Time Series Outcome Prediction

**William Wu** (September, 2022) Neural Data Shaping and Evaluation via Mutual Information Estimation

**Timmy Z. Xiao** Embedding StarLogo Nova into WISE for a Seamless Student Experience **Gregory Xie** Mechanical Intelligence Reduces Algorithmic Burden

Katherine Xiong A Concept-Based Analysis of Dark Patterns in User Interface Design

Katherine Yang Xu (February, 2023) Modeling Extreme Heat Risk in Urban Areas Using Computer Vision and Data Analysis

Hao Bang Yang Last Layer Retraining of Selectively Sampled Wild Data Improves Performance

Janice C. Yang Deep Learning MRI-based Model for Prediction of Clinically Significant Prostate Cancer

Ming Ying Yang Evaluating the Impact of Social Determinants of Health on Prediction of Clinical Outcomes in the Intensive Care Unit

Yilinn Yang Explaining Concepts through Labs that Present Real-World Scenarios in an Introductory Computer Science MOOC

**Rui Yao** Concentration Inequalities for Dependent Random Variables on Bayesian Networks

Veerapatr Yotamornsunthorn (September, 2022) Decoding Invisible 3D Printed Tags with Convolutional Neural Networks

**Brandon W. Yue** Optimizing Out-Of-Memory Sparse-Dense Matrix Multiplication

Azreen Zaman Using Natural Language Processing to Facilitate Common Student Misconception Analysis

Marcos Rubén Zárate Gamarra (September, 2022) Effects of Extending the Length of MIT's Introduction to Computer Science Course on the Performance of Students with Little Programming Experience

## Ann Zhang

Using Starlogo Nova as a Classroom Assignment Orchestration Tool for Learning Computational Modeling in DC High Schools

## Qianqia Zhang

(September, 2022) CollaboRanger: Coordinating Differences of Individuals in Group Coordination

#### Jessica Amber Zheng

(February, 2023) Machine Learning Applications for Time Series Data: Motor Anomaly Detection and Mean Arterial Blood Pressure Estimation

#### Yiming Zheng

(See also S.B., Course VI-3) An Analysis of Rationale Models and Influence Functions for Interpretable Machine Learning

#### Sophia Zhi

Unsupervised Phonetic Category Learning from Audio and Visual Input

## Howard N. Zhong

(See also S.B., Course VI-3) Learning Privacy-Preserving Transferable Video Representations

#### Xinhe Zhou

(September, 2022) Investigating Reinforcement Learning and Evolutionary Computation for Games with Stochasticity and Incomplete Information

## Travis J. Ziegler

(See also S.B., Course VI-2) Applications of AI on Resource-Constrained Hardware with a focus on Anomaly Detection

# Master of Engineering in Computer Science and Molecular Biology

Course VI-7 Department of Electrical Engineering and Computer Science in conjunction with the Schwarzman College of Computing

Nathan Han Expansion Microscopy of Cells in Suspension

Andrew D. Hennes (See also S.B.,Course V) Continuous Evolution of Inteins with Novel Properties

Shulammite E. Lim HIPAAway: Developing Software for De-Identification and Exploring Bias in Name Detection

# Clinton S. Reid

Deciphering and Modelling the Action of Immune Cells using Highly Multiplexed Imaging and Deep Learning Techniques

# Master of Science in Electrical Engineering and Computer Science

Course VI Department of Electrical Engineering and Computer Science in conjunction with the Schwarzman College of Computing

## Aziza Almanakly

(September, 2022) Towards a Quantum Network with Waveguide Quantum Electrodynamics

## Junyoung An

(February, 2023) Engineering Noise-Protected Superconducting Qubits

## **Tanner Andrulis**

Efficient, Accurate, and Flexible PIM Inference through Adaptable Low-Resolution Arithmetic

## Daniel Mengistu Ayane

(See also M.B.A., Course XV) Inference of the Novel Coronavirus 2019 in Patients Fitted with Boston Scientific Medical Hardware

#### Hana N. Azzouz

(February, 2023) Second Harmonic Generation in Silicon Photonic Crystal Resonators for Quantum Optic Applications

### William Philip Banner

Quantum and Quantum-Inspired Optimization on a Superconducting Quantum Processor

# Adina R. Bechhofer

(February, 2023) Geometrical Optimization of Planar Nano Vacuum Channel Transistors

#### **Renato Berlinghieri**

Gaussian Processes at the Helm (holtz): A More Fluid Model for Ocean Currents

#### **Zoey Bigelow**

3D-Printed Multi-Langmuir Probe Device for Use on CubeSats for Plasma Diagnostics

#### **Mercer Renée Borris**

(See also M.B.A., Course XV) AI in the Cath Lab: Implications of Clinical AI-Enabled Assistance for Intravascular Ultrasound Procedures

## Samuel Bosch

Artificial Neural Networks for Programming Quantum Annealers

## Matthew Lee Bowers

Top-Down Synthesis for Library Learning

## Alexa Reese Canaan

(See also S.M., Technology and Policy Program) Benchmarking Residential Electricity Consumption: A Utility's Demand-Response Machine Learning Approach to the European Energy Crisis

#### Yuchen Chai

(See also M.C.P., Course XI) Determinants and Interventions for Physical Activity Adherence during COVID-19: A Global Study Using Machine Learning Approach Kartik Chandra Inverse Inverse Graphics

**Dimitrios Chatzinikolis** (See also S.M.Arch.S., Course IV) Making Hands: Neural Implicit Manifold Learning of Hand Gestures

**Justin Yu-wei Chen** (February, 2023) Estimating Frequency Distributions in Data Streams

**Gabriele Corso** (February, 2023) Modeling Molecular Flexibility with Structured Diffusion Models

David D. Covell

(See also SM., Course XV) Preventing WIPlash: Implementation of a Controlled Release Strategy to Improve Shop Performance

Aidan Curtis Constructing and Refining Representations for Efficient Visual Task and Motion Planning

Parmida Davarmanesh Analysis of 3D Genome Organization in 4-Cell Mouse Embryos

**Marc Grau Davis** (February, 2023) Numerical Synthesis of Arbitrary Multi-Qubit Unitaries with Low *T*-Count

Ronald A. Davis III (September, 2022) A Deep Learning and Signal Processing Architecture Using Frequency-Encoded RF Photonics

**Peter William Deutsch** (September, 2022) Analysis and Mitigation of Microarchitectural Side-Channels

**Qi Ding** Pulse Design for Two-Qubit Gates in Superconducting Circuits

Daniel Brian Donenfeld (February, 2023) Unified Compilation for Lossless Compression and Sparse Computing **John Michael Drago** (September, 2022) Multiphoton Parallel Transmit MRI for Flip Angle Mitigation Without SAR Concerns

**Barış Can Ekim** (September, 2022) Scalable Sketching and Indexing Algorithms for Large Biological Datasets

Fares Ehab Mohamed Abouelnasr Elsabbagh Accelerating RTL Simulation with Hardware-Software Co-Design

Hasan Sabri Melihcan Erol On Semi-Supervised Estimation of Distributions

**Maxwell K. Fishelson** (February, 2023) No-Regret Learning in Games

Sophie E. Fisher Efficient Perturbative Framework for Coupling of Radiative and Guided Modes in Nearly Periodic Surfaces

**David Jasper Forman** Bayesian Time Series Structure Learning: Formulation of an Event Driven Prior Distribution

**Camilo Luciano Fosco** Detecting and Evidencing Doctored Videos: Showing Humans How Fake Deepfakes Are

Adam Matthew Gierlach Ingestible Electronics for High Quality Gastric Neural Recordings

Nishad Date Gothoskar (February, 2023) Probabilistic Programming for 3D Scene Understanding

Gabriel J. Grand Discovering Abstractions from Language via Neurosymbolic Program Synthesis

**Miela Josephine Gross** (February, 2023) Microstructural Analysis of REIG/Pt/ GGGG Heterostructures Sarah Faye Gurev Early Warning of Viral Antibody Escape from a Biologically-Informed Computational Framework

**Lelia Marie Hampton** Heavy-Tailed Uncertainty in Deep Learning

Lauren Marie Heintz (See also M.B.A., Course XV) Scenario Analysis of Profitability through Simulation of Different Business Contract Models

**Aspen Kennedy Hopkins** (September, 2022) Rhetorical Force in Explanations and Visualizations

**Zhongqiang Hu** (September, 2022) Novel Phenomena Induced by Magnon-Magnon and Magnon-Spin Coupling

**Benjamin Thomas James** Linking Epigenomic Regions to Target Genes

Vindula Muthushan Jayawardana (September, 2022) An Invisible Issue of Task Underspecification in Deep Reinforcement Learning

**Ce Jin** (September, 2022) Quantum Algorithms for String Problems

**Tian Jin** (September, 2022) On Neural Network Pruning's Effect on Generalization

**Bowen Jing** (September, 2022) Structured Diffusion Processes in Deep Generative Models

Mansi Vipul Joisher High-Performance High-Power Inductor Design for High-Frequency Applications

Nicholas William Jones (September, 2022) Optimizing Random Access for Information Freshness in Spatially Distributed Wireless Networks

#### Geet Kalra

(February, 2023) (See also S.M., Engineering and Management) Machine Learning for Detection of Cyberattacks on Industrial Control Systems

#### Pantea Karimi Babaahmadi

Bridging the Gap between Real-Time Video and Backlogged Traffic Congestion Control

## Christopher John Karpovich

(See also S.M., Course III) Machine Learning Enabled Inorganic Synthesis Planning and Materials Design

#### Alaa Khaddaj

(September, 2022) On the Role of the Source Dataset in Transfer Learning

## Joonhee Kim

(February, 2023) (See also S.M., Technology and Policy Program) Sensitivity of the Ozone Layer, Climate, and Public Health to Changes in the Location of Aviation Emissions

#### Aikaterini Lamprou

(See also S.M.Arch.S., Course IV) The Shape of Music. Computational Specification of Hand Gestures in Piano Playing

#### Simon Hogan Langowski

(September, 2022) Fast, Metadata-Private Anonymous Broadcast

#### Hannah Louise Lawrence

(September, 2022) Harnessing Symmetry and Structure in Deep Learning

#### **Eunseok Lee**

(February, 2023) Ultra-Miniaturized, Secure Wake-Up Receiver Based on THz Carrier Wave

## Belinda Zou Li

(February, 2023) Measuring and Manipulating State Representations in Neural Language Models **Derek Lim** Neural Networks on Eigenvector Data

**Junhong Lin** (September, 2022) Ultrahigh-Resolution OCT Imaging of Fine Structure Alterations in the Outer Retina

Allen X. Liu (September, 2022) Learning Mixtures of Gaussians

#### Qingyang Liu

(See also S.M., Technology and Policy Program) Unlocking the Potential of Hydrogen in Intermittent Electricity Systems: A Global Assessment of Levelized Cost of Hydrogen and Low Carbon Industrail Hub Profitability

## Ming Yang Lu

Visual Language Pretrained Multiple Instance Zero-Shot Transfer for Histopathology Images

#### Pingchuan Ma

(February, 2023) Efficient Continuous Pareto Exploration in Multi-Task Learning

# Stephanie E. Marzen

(February, 2023) Germanium on Silicon Photodiodes For Back-End-Of-Line Photonic Integration

#### Surya Mathialagan

(September, 2022) Optimal Oblivious RAM with Integrity

**Leticia Mattos Da Silva** A Framework for Solving Parabolic Partial Differential Equations on Discrete Domains

Andrew James Mighty (See also M.B.A., Course XV) Autonomous Drone Assisted Aircraft Inspections

**Peter George Mikhael** Predicting Future Lung Cancer Risk From a Single Low-Dose Chest Computed Tomography

## Adam Joseph Miller

(September, 2022) Learning Legged Locomotion by Physics-Based Initialization: Motion Imitation from Model-Based Optimal Control

## Kyung Hoi Min

(September, 2022) Dynast: Inclusive and Efficient Quantification of Metabolically Labeled Transcripts in Single Cells

#### Michaela Elizabeth Murr

(See also M.B.A., Course XV) Predictive Models from Real-time Sensors in Process Analytical Technology Initiative in Biomanufacturing

#### Weon Taek Na

Circumventing Memory Corruption Mitigations in the Spectre Era: Real-World Attacks and Systematic Analysis of Defenses

## Quang Minh Nguyen

(September, 2022) Optimal Control for Wireless Software Defined Networks: Theory and Implementation

#### Nassim Oufattole

Towards Creating Synthetic Data Testbeds for Research

#### Michail Ouroutzoglou

(September, 2022) Quantifying Nocturnal Itch and Its Impact on Sleep Using Machine Learning and Radio Signals

#### **Umesh Janak Padia**

(September, 2022) Quantitative Methods for Multiplexed Cellular Engineering and Directed Evolution

**Avik Pal** On Efficient Training and Inference of Neural Differential Equations

**Bowen Pan** Dynamic Inference for the Video Understanding Model

#### **Gabriel Joseph Pascualy**

(See also M.B.A., Course XV) Enabling Actionable Maintenance Analytics with Ontology-Driven Natural Language Processing Andi Peng (February, 2023) Aligning Human and Robot Representations

**John Clayton Rademacher, Jr.** Enabling Long-Range Underwater Backscatter via Van Atta Acoustic Networks

Hamza Hussain Raniwala (September, 2022) Design of Efficient Acoustic Interfaces for Quantum Emitters in Diamomd

Dhruv W. Rohatgi (February, 2023) Computationally Efficient Reinforcement Learning under Partial Observability

#### Branden Robert Romero

(September, 2022) Design and Fabrication of Soft, Round, High Resolution Tactile Fingertip Sensors for Dexterous Robotic Manipulation

## **Edvard Ronglan**

(See also S.M., Course II) Bayesian Optimization and Cartesian-Grid Simulations for Artificial Reef Design

#### Rohit Priyadarshi Sanatani

(See also S.M.Arch.S., Course IV) PLACEIFY: A Data-Driven Framework for Evaluation-by-Analogy in Early-Stage Urban Analysis and Design

#### **Christopher Basil Scarvelis**

(September, 2022) Riemannian Metric Learning via Optimal Transport

#### Nicholas Benjamin Schiefer

(September, 2022) Learned Interpolation for Better Streaming Quantiles with Worst Case Guarantees

## Upamanyu Sharma

(September, 2022) Modular Verification of Distributed Systems with Grove

#### Shabnam Sheikhha

Task Scheduling Techniques to Accelerate RTL Simulation

Maohao Shen Trustworthy Learning and Uncertainty Quantification under Constraints

Zhiye Song Algorithm and Hardware Cooptimization for Image Segmentation in Wearable Ultrasound Devices: Continuous Bladder Monitoring

Sarah O. Spector (February, 2023) Nonplanar Nanostructures with Planar Fabrication via Interface Engineering

**Joseph Suarez** The Neural MMO Platform for Massively Multiagent Research

Haoyuan Sun A Unified Approach to Controlling Implicit Regularization Using Mirror Descent

Ariel Szekely (September, 2022) σOS: Elastic Realms for Multi-Tenant Cloud Computing

Benny Jun-Hong Tang (See also S.M., Engineering and Management) VisText: A Benchmark for Semantically Rich Chart Captioning

Max Alan Tanski (See also M.B.A., Course XV) Making More Miles: Automating Load Selection, Truck Dispatch, and Backhaul Activation in Outbound Logistics Operations

Han Tu (See also S.M.Arch.S., Course IV) Analyzing Affective Responses to Virtual Spaces Using Physiological Sensors and Verbal Descriptions

**Onyinyechi Chiemela Ukaire** (See also M.B.A., Course XV) Predicting and Preventing Unsafe Events at an Enterprise

Shelby Madison Unger (See also M.B.A., Course XV) Analysis of Respiratory Time Series Data for Breathing Comfort Detection Prior to Sleep Onset During APAP Therapy Kai Yee Wan (See also S.M., Engineering and Management) Simultaneous Localization and Calibration in a Wireless Network of Uncooperative Receivers

Hanfeng Wang

(September, 2022) Dense Spin Arrays with Low Cross-Talk Operations for Quantum Network Applications

Jinchen Wang

(September, 2022) THz Cryo-CMOS Link for Quantum Computing

Rui Wang

(February, 2023) (See also S.M.Arch.S., Course IV) City Image: A Dynamic Perspective Using Machine Learning and Natural Language Processing

**Tongzhou Wang** (September, 2022) Geometric Properties of Learned Representations

Weiyang Wang (September, 2022) TopoOpt: Optimizing the Network

TopoOpt: Optimizing the Network Topology for Distributed DNN Training

Wentao Weng

(February, 2023) Efficient Decentralized Multi-Agent Learning in Asymmetric Queuing Systems

Yilun Xu

(September, 2022) Controlling Directions Orthogonal to a Classifier

Lujie Yang (February, 2023) Discrete Approximate Information States in Partially Observable Environments

Alec Yen

(September, 2022) Interference Purcell Filter for Fast, Modular, and Hardware-Efficient Quantum Measurement Jason Yim (February, 2023) Generative Models of Protein Structure and Sequence

**Abbas Zeitoun** Making Language Models Use Prompts

Anna Zeng Causal Graph Summarization

**Jiao Zhang** (February, 2023) (See also S.M., Technology and Policy Program) Improving Predictability of Wind Power Generation

## **Jiaqi Zhang** (September, 2022) Active Learning for Optimal Intervention

Design in Causal Models
Rachel Y. Zhang

(February, 2023) Interactive Error Correcting Codes

Ziyuan Zhu (September, 2022) (See also S.M.Arch.S., Course IV) Unwanted Project: Speculative Design for Circularity

# Master of Science in Chemical Engineering Course X

Department of Chemical Engineering

# Alexander Leo Casati Judge

(See also M.B.A., Course XV) Enhancing Workflows in Biologics Drug Substance Process Development Through Automation

Clara Troyano-Valls (February, 2023) Advances in Single Component Adhesive Enable the Production of High-Performance Rubber Composites Containing 40 wt% Rubber Waste and 95 wt% Rubber Waste When Supplemented with Devulcanization

# Master of Science in Chemical Engineering Practice

Course X-A Department of Chemical Engineering

**Mohammad Ayman Alkhadra** (September, 2022) (See also Ph.D., Course X) Attended School of Chemical Engineering Practice in Lieu of Thesis

Barathkumar Baskaran Attended School of Chemical Engineering Practice in Lieu of Thesis

**Keith Ming Hong Cheah** (See also Ph.D., Course X) Attended School of Chemical Engineering Practice in Lieu of Thesis

**Bhavish Dinakar** Attended School of Chemical Engineering Practice in Lieu of Thesis

Nathan Timothy Ewell Attended School of Chemical Engineering Practice in Lieu of Thesis

**Chinmay Shripad Gangal** Attended School of Chemical Engineering Practice in Lieu of Thesis

**Aristotle Franklin Grosz** Attended School of Chemical Engineering Practice in Lieu of Thesis

**Krishna Pavan Inguva** Attended School of Chemical Engineering Practice in Lieu of Thesis

**Sydney Rose Johnson** (September, 2022) Attended School of Chemical Engineering Practice in Lieu of Thesis

**Justin Andrew Kaskow** Attended School of Chemical Engineering Practice in Lieu of Thesis

#### **Aya Ahmedelmukhtar Mohamedosman Khalifa** (September, 2022) Attended School of Chemical

Attended School of Chemical Engineering Practice in Lieu of Thesis **Joel Chi Yui Lau** (February, 2023) Attended School of Chemical Engineering Practice in Lieu of Thesis

Alexander H. Liu (February, 2023) Attended School of Chemical Engineering Practice in Lieu of Thesis

**Ke-Chi Liu** (September, 2022) Attended School of Chemical Engineering Practice in Lieu of Thesis

Xinquan Liu (September, 2022) Attended School of Chemical Engineering Practice in Lieu of Thesis

**Ziwen Martin Ma** (September, 2022) Attended School of Chemical Engineering Practice in Lieu of Thesis

Nicholas John Matteucci, Jr. Attended School of Chemical Engineering Practice in Lieu of Thesis

Simar Kaur Mattewal Attended School of Chemical Engineering Practice in Lieu of Thesis

Kaylee Lynn McCormack Attended School of Chemical Engineering Practice in Lieu of Thesis

**Chase Novak** (September, 2022) Attended School of Chemical Engineering Practice in Lieu of Thesis

Anthony Walter Picchi (February, 2023) Attended School of Chemical Engineering Practice in Lieu of Thesis

**Thomas Koizumi Porter** Attended School of Chemical Engineering Practice in Lieu of Thesis

Farah Omar Ramadan (September, 2022) Attended School of Chemical Engineering Practice in Lieu of Thesis **Theodore M. Riotto** (February, 2023) Attended School of Chemical Engineering Practice in Lieu of Thesis

Katelyn Marie Ripley Attended School of Chemical Engineering Practice in Lieu of Thesis

Yash Samantaray Attended School of Chemical Engineering Practice in Lieu of Thesis

**Gabriel Sánchez Velázquez** Attended School of Chemical Engineering Practice in Lieu of Thesis

**Abigail Rae Taussig** (September, 2022) Attended School of Chemical Engineering Practice in Lieu of Thesis

**Dousabel May Yi Tay** Attended School of Chemical Engineering Practice in Lieu of Thesis

**Gerrit P. Van Ommering** (September, 2022) Attended School of Chemical Engineering Practice in Lieu of Thesis

**Caleb Daniel Watson** (February, 2023) Attended School of Chemical Engineering Practice in Lieu of Thesis

**Trent Alexander Weiss** Attended School of Chemical Engineering Practice in Lieu of Thesis

**Joshua Woodrow Wilkerson** (September, 2022) Attended School of Chemical Engineering Practice in Lieu of Thesis

**Zhewei Xie** Attended School of Chemical Engineering Practice in Lieu of Thesis

**Jing Ying Yeo** Attended School of Chemical Engineering Practice in Lieu of Thesis <u>Master of Science in</u> <u>Aeronautics and Astronautics</u> Course XVI Department of Aeronautics and Astronautics

Marcus Salvatore Abate Performance Enhancements to Visual-Inertial SLAM for Robots and Autonomous Vehicles

James M. Abel (February, 2023) Comparative Assessment of the Societal Cost of PtL and LH2 as Aviation Fuels

Kristen Joyce Ammons (September, 2022) Concept of Operations and Failure Analysis for a Complex Deployable CubeSat Antenna Payload

Jacqueline E. Ankenbauer Global Localization and Guided Relocalization in Unstructured Environments Using Semantic Objects

John Thomas Clarke Barstow (See also M.B.A., Course XV) Application of Systems-Theoretic Process Analysis to Work Movement in Production Systems

Michael James Brown, Jr. Mechanical Shock Analysis and Testing of an Air-Dropped Antarctic Ice Penetrator

Matthew Charles Campbell (February, 2023) Forced Response Measurements of Cavitation Dynamics in a Rocket Engine Turbopump Inducer

Zhibo Chen (September, 2022) A Tail-Integrated Boundary-Layer Ingesting Propulsion System for Turbo-Electric Aircraft

Juliana L. Chew Evaluating the Use of TROPICS Pathfinder Observations for Lunar Calibration

Nicolette LeAnn Clark Reduced-Order Atmospheric Density Modeling for LEO Satellite Orbital Reentry Prediction Sarah Elaine Demsky

Analysis of Double Cropping to Expand Sustainable Aviation Fuel Production in the United States

**Raphael Jean Dijoud** Ignition by Nanosecond Repetitively Pulsed Discharges

**Geoffrey Ding** Privacy Risk Mitigation Strategies for Drone Package Delivery

James Patrick Dingley Satellite Market Modelling with Agent-Based Computational Economics

**Jad A. Elmourad** (February, 2023) Evaluating Fuel-Climate Tradeoffs in Contrail Avoidance

Daniel Erkel (February, 2023) (See also S.M., Technology and Policy Program) The Success of Emerging Space Actors: Effective Strategies in the NewSpace Era

Alexandra Mae Forsey-Smerek (September, 2022) Situational Cueing for Trust Calibration in Automated Systems

Andres Garcia Jimenez Quantitative Assessment of the Frictional Ignition Resistance of Metals in High-Pressure Oxygen

Julia C. Gaubatz Design and Development of Stability and Control Systems for Small, Deployable Aircraft

**Sideena Kateri Celestine Grace** Investigating the Impact of Communication Delay on Mission Control as an Effective Team Member with the Crew

**Carla Grobler** CO<sub>2</sub> and Public Health Impacts of US Residential Heating Electrification

 $\begin{array}{l} \textbf{China Hagström} \\ (February, 2023) \\ Early Plume Development and NOx \\ Chemistry in LOx/H_2 \ and LOx/CH_4 \\ Liquid Rocket Engines \end{array}$ 

Jacob Frederick Harburg (February, 2023) Improvements to LEO Tracking on The Portable Telescope for Lasercom

Shravan Hariharan Laboratory Characterization of Mars In-Situ Resource Utilization (ISRU) Using the Mars Oxygen ISRU Experiment (MOXIE) FlatSat Testbed

Hanna-Lee Nava Harjono Development of a Throttleable Attitude Control Scheme for Electrospray Propulsion Systems

**Kyle James Horn** (February, 2023) Adaptive Oxygen Production of the Mars Oxygen ISRU Experiment (MOXIE) though Feedback Control of Pressure Sensor 4

Asha Kailin Jain On the Atmospheric Saliency of Space Debris Reentries: Estimating the Distribution, Lifetime and Radiative Forcing of Reentry-Ablated Alumina

**Paul Mitchell Johnson** (See also M.B.A., Course XV) Parametric Study of Environmental Testing in Satellite Manufacturing

Alexander P. Koenig A Systems Framework for Multi-Messenger Astronomy

Scarlett E. Koller (See also M.B.A., Course XV) Applying Satellite Broadband Connectivity with Edge Computing to New Industry Verticals

Kota Kondo Multiagent Trajectory Planning Under Communication Delay

**Ngoc Thuy Minh La** (February, 2023) Human-Aware AI Assistant

**Dongjoon Lee** Multi-fidelity Design with Incremental Optimization Guided Decisions

Kanghyun Lee Influence of Turbofan Engine Design on Aircraft Environmental Impact **Shu-Yu Lin** Development and Validation of Wearable Sensor System for Quantifying Proprioceptive Adaptation

**Peter Yu-Farn Liu** (See also S.M., Technology and Policy Program) System Dynamics Modeling and Analysis of Continuous Production Agility: Policies and Enablers for Resilient Satellite Constellations

**Dominic R. Maggio** Visual Location for Spacecraft Entry Decent and Landing

**Aaron R. Makikalli** Aerodynamic and Thermal Considerations for an Antarctic Ice Penetrator

Eduardo Maristany (See also M.B.A., Course XV) Economic Analysis of 3D-Printed Ceramic Cores for Gas Turbine Investment Castings

**Spencer Thomas McDonald** (See also S.M., Transportation) Optimizing Urban Air Mobility Operations in a Corridor Network

**Shervin Mehryar** State Estimation for Future Power Networks

Alexandra R. Meredith (February, 2023) Applying Rotation-Equivariant Deep Learning to Cloud and Road Segmentation in Satellite and Aerial Imagery

Alex S. Miller Impact Analysis and Design Development for Air-Dropped Antarctic Seismo-Geodetic Ice Penetrator

Youngjae Min One-Pass Learning via Bridging Orthogonal Gradient Descent and Recursive Least-Squares

Jeong Suk Oh Sensitivities of Atmospheric Composition to High-Altitude Vehicles Emissions **Codrin P. Oneci** Distributed Estimation Algorithms for Autonomous Systems

Kaleb Daniel Overby Development of Electrodes for an Electrostatically Actuated Mesh Reflector

Jennifer Lindsey Pandolf (See also M.B.A., Course XV) Investigation of Model-Based Systems Engineering Integration Challenges and Improvements

**Celina Pasiecznik** Evolutionary Debris Modeling of LEO and Cis-Lunar Space

**Julia Pasiecznik** Koopman Operator Theory Applied to Lambert's Problem wtih a Spectral Behavior Analysis

Nicholas Joseph Perovich (September, 2022) Design Studies for Future EAD-Propelled Aircraft

Victor L. Qin Market Mechanisms for Service Provider Operations in Advanced Air Mobility

Zengyi Qin (September, 2022) Learning Large-Scale Multi-Agent Control with Safety Certificates

**Chirag Raghuveer Rao** (September, 2022) Age of Information for Broadcast and Collection in Spatially Distributed Wireless Networks

**Nicholas Aaron Rober** Towards Tight and Scalable Backward Reachability Analysis for Neural Feedback Loops

Louis Anh Tài Robion Improving the Temporal Consistency of Satellite-Based Contrail Detections Using Ensemble Kalman Filtering

**Diego Andre Salgado Bobadilla** Comparative Energy Efficiency Analysis for Hydrogen and Jet Fuel in Next-Generation Long-Haul Aircraft Saba Zareen Shaik Single-Polarity Ion Electrospray Propulsion

#### Haley Elizabeth Solera

Python-Based Tools for Characterizing Geosynchronous Satellite Behavior and Evaluating Maneuver Prediction Techniques

### **Thomas Ryan Stuart**

(See also M.B.A., Course XV) Defining Core Manufacturing Capabilities in an Aerospace Company

#### Dun Yuan Tan

Implications of Intermittency of Renewable Energy on Power-to-Liquid SAF production

#### Marek Travnik

(September, 2022) A Data-Driven Approach for Predicting and Understanding Braking Conditions of Landing Aircraft

## Tesla Del Mare Wells

(February, 2023) Using Qualitative Preferences to Guide Schedule Optimization

# Andrew Scott White

(September, 2022) Trade-Space Analysis of Liquid Hydrogen Propulsion Systems for Electrified Aircraft

# Joshua Kevin White

(September, 2022) Analysis of Continuous Tensor-Train Methods for Optimal Control Problems with the Ornstein-Uhlenbeck Operator

## **Emily Jane Williams**

Assessment of Wall-Modeled Large-Eddy Simulation for High-Speed Flows and Novel Modeling Strategies

## Kathleen Shiyin Xu

Differential Drag-Based Maneuvering for the CubeSat Laser Infrared CrosslinK (CLICK) Mission

# Master of Engineering in Biomedical Engineering Course XX-P

Department of Biological Engineering

## Karenna Jade Groff

Generation of Focal *Depdc5* Knockout Mouse Model and Implications for Focal Epilepsy

## Atharv V. Oak

(See also S.B., Course XVIII) ILF3 Links mRNA Decay in the Cytoplasm to Transcriptional Adaptation

# <u>Master of Science in Biological</u> <u>Engineering</u> Course XX

Department of Biological Engineering

# Malek Kabani

(February, 2023) Investigating the Neurological Effects of SARS-CoV-2 Infection on the Brain

# Master of Science in Nuclear Science and Engineering

Course XXII Department of Nuclear Science and Engineering

## Kristina

Neutronic Analysis of Horizontal-Compact High Temperature Gas-Cooled Reactor

## Santiago Andrade Aparicio

(See also M.B.A., Course XV) Technical and Commercial Feasibility Assessment of Nuclear Microreactors as a Clean Energy Source for Data Centers and Mining Sites

# Loukas L. Carayannopoulos

(February, 2023) (See also S.B., Course XXII-ENG) Simulation of Irradiation of a Molten Salt Loop at the MIT Reactor

## Lorne Russell Cohen

Modelling of Graphite Elements and Low Enriched Fuel Assemblies for a High Temperature Gas-Cooled Reactor

## Maximilien Fadi Debbas (September, 2022) An Investigation into Topological Crystals and Flat Band Systems

#### Zoe Lilah Fisher

(See also S.B., Course XXII-ENG) Annealing Cryogenically Irradiated High Temperature Superconductors with Current Pulses

## **Edward James Garcia**

(February, 2023) Scaling Siting Criteria and Identifying Alternative Licensing Pathways for Micro-Reactors within the Existing Regulatory Framework

## Lindsey Anne Kennington

(See also M.B.A., Course XV) A Techno-Economic Analysis of Hydrogen, Electric, and Diesel Fuel in Medium - and Heavy-Duty Transportation Applications

## Chumani Mokoena

An Investigation of Major Component Disposal Costs for Advanced Nuclear Reactors

#### Michael Kenneth Moore

Design Options to Address Submersion Criticality for Low-Enriched Uranium Nuclear Thermal Propulsion Rocket

## Isabel Naranjo De Candido

(February, 2023) Staff Minimization Strategy for Micro-Reactors

## Gyutae Park

Increasing Cermet Fuel Thermal Margin with Thoria for Nuclear Thermal Propulsion

## **Daniel Robert Reinfurt**

Uranium Enrichment Signatures of Fluorinated Epoxy

## Kevin Tang

(February, 2023) Evaluation of Novel Laser-Skived Microbridges for Improved Characterization of REBCO Superconductor

<b>Julia of Witham</b> Mission and System Design for In-Situ Resource Utilization in the Outer Solar System Using Nuclear Propulsion	Mostafa Khedr Mohamed Khedr Elz- anfaly	Andrew Mohn
	Andrea Esposito	Sean Oakley Moran
Technologies Yinjie Zhao (September, 2022) LEU-HEU Mixed Core conversion analysis and Coolant System Upgrade for the MIT Research Reactor	Emma Eustis	Anumanth Sarma Murugesan
	Lanyan Feng	Marcela Navarro Lara
	Julia Fernandez del Valle y Rivera	Sneha Neversu
Master of Applied Science in	Kristen Michelle Foster	Kyle Patrick O'Brien
<u>Supply Chain Management</u> Program in Supply Chain	Pu Gao	Jorge Enrique Oliver Verastegui
Management	Harry Pomeroy Hawkes III	Shruti Pant
Rohan Alexander	Brian James Hinkamp	Adriele Pradi
Osama Alhasan	Szuya Huang	Ritesh Rai
Moutaz Faisal Ali	Shoichi Ishida	Kaitlyn Danielle Lee Rakestraw
Geoffrey J. Allen	Marwan Ismael	Matthias Schumm
Pablo Andres Barros Gomez	Hassaan Jaffar	Boping Shan
Amina Benhassine	Rohit Kapila	Kamran Iqbal Siddiqui
Elizabeth M. Bruttomesso	Yujia Ke	Charles Edward Snow
Francisco Andres Calero Mantilla	Bishwajit Kumar	Hannah Justine Sonnenberg
Tulio Rene Castillo Ovalle	Yien Lai	Furqan Khalil Syed
Kefan Chen	Madeleine M Y Lee	Gabriel Szuma
Yumeng Chen	Lydia Lim	Mauricio Arturo Taborga Claure
Yu-Ta Chen	Kirill Lobanov	Mehdi Tagorti
Yeonjoon Choe	Romain Lucas	Yusuke Tanaka
Luis Rodrigo Dávila Novoa	Joseph Anthony Lynch	Maria A. Tartaglia
Morgan Jessica DeHaan	Nayantara Mehta	Prateek Tewari
Nauryzkhan Dildabekov	Haoxin Mei	Nicolò Tosi
Donald Inyene Ekanem	Melania Nina Meleney	Samara Vilar da Costa
Richard Augustus Elmquist III	Gianmarco Alexander Merino Sandoval	Yin Wang

Yusong Wei

Shobhit Kumar Yadav

Xinjian Zheng

# Master of Science in Engineering and Management

Program in System Design and Management

## Zenia Adiwijaya

Revamping Manufacturing Systems: Utilization of Data Driven Models, Interpretable Machine Learning, and Data-Product Stakeholder Flow Analysis

## Javier Agüera Reneses

(February, 2023) SOCIALIC: A Novel Role-Playing Simulation Exercise for Ethics Teaching in Higher Education Institutions

**Grace S. Ahn** Bespoke Design Meets Systems at Scale: A Design Study with Judy Heumann

## Abdulelah Saad Al Mesfer

Forecast-Driven Inventory Management for the Fast-Moving Consumer Goods Industry

## Hassaam Ali

(February, 2023) MIT-Middle East Multi-Party Collaboration

## Kim Whatt Gary Ang

(September, 2022) Using a Cyber Incident Report to Detect and Mitigate Cyber Vulnerabilities in Industrial Control Systems

#### Jerome Arul

Method to Design and Fabricate an Octahedral-Tetrahedral Spaceframe from Repurposed Scaffolding

## Anthony R. Atto

(September, 2022) The Future of Technology Bargaining in the Information Age

## **Matthew Brian Barnes**

(September, 2022) Energy Transition Impacts for Workers: A Comparative Analysis of Differences in Energy Transition Policies in Germany and Appalachia and their Impact on Coal Employment Outcomes

#### Saloni Bedi

Developing and Testing a Portable Device for Tracking Small Deviations in the Hydration Levels of a Human Body

## **Charles Keeler Brown**

Conquering the Challenge of Reliability: Text Mining to Map Trends in Reliability Engineering Literature

#### Andrew Michael Canady

(February, 2023) Safety in U.S. Navy Navigation Applying STAMP Processes to Surface Ship Collisions

## Erh Chieh Chang

Supplier Development Framework in Supply Chain Cybersecurity Evaluation of Small and Medium-Sized Enterprises

# Doo Hyun Mark Chung

(September, 2022) Techno-Economic Assessment of Electrolytic Hydrogen Production under Dynamic Operations

## Sarah Bryson Coyle

(September, 2022) Hydrogen Storage Potential of the Salina Group, Appalachian and Michigan Basins

#### Alexander S. Crease

Climate Change Conversations with Children: Making Sustainability Meaningful, Tangible, and Actionable (with N. Singhasaneh)

## Anna Nadia Cybulsky

(February, 2023) Techno-Economic Modeling and Optimization of Hydrogen Supply Chain for Aviation Demand

#### Aidana Daulbayeva

Behavioral Design for Emotional Intelligence: Leveraging Affective Computing in Medical Education for Improved Care for Substance Use Disorders

## **Robert Lee Day**

Operational Analysis and Mission Engineering: A Strategy and Framework to Analyze any Industrial Ecosystem

#### Carmen Maria de la Sierra Cauley

Economics of Renewable Electricity: Lessons for Potential Investors from the California and Texas Electricity Markets

## Joshua Michael DiPietro

(September, 2022) Flexible in Engineering Design Approach to Fleet Management

#### Jake Drutchas (February, 2023)

Entrepreneurship By Design

## Dipti Garg

(February, 2023) Representation and Management of Scope through Project Lifecycle

## Kurt Drew Geiger, Jr.

(September, 2022) Exploring Career Pathways within an Organization Based on the Assessment of Prior Experience

## Sahas Gembali

Phygital Transformation: Adding Physical Devices to Digital Products to Improve the User Experience

## Margaret Calliope Georgiadis

(See also M.B.A., Course XV) Facilitating Multi-Perspective-Taking in Adults: A Field Study

#### Mervine Anand Govada

A Systems Approach to Understanding Challenges in Preserving User Privacy. And How Federated Learning and Differential Privacy Enables Enterprises to Take a Consumer-Centric Approach and Reduce Privacy Concerns.

#### Akshita Goyal

Integrated Systems and Human-Centered Design Approach for Awareness, Early Diagnosis and Treatment Adherence of ADHD and ADD for Children of India

#### Neil Kelsey Hallock

An Experimental Design to Assess Team Performance Through Shared Mental Models

#### **Bruce Allen Hecht** (February, 2023) Engagement Mechanisms in Transit-Oriented Development Using Model-Based Workshops of Sustainable Community Development

# Andre Jermaine Hicks

(September, 2022) System Analysis of a Numerical Well Design Optimization Process

# Seoyeon Tara Hong

(September, 2022) Decarbonizing the Global Shipping Industry: Evaluating Pathways for Alternative Fuels

#### Geet Kalra

(February, 2023) (See also S.M., Course VI) Machine Learning for Detection of Cyberattacks on Industrial Control Systems

#### Toru Kawasaki

Analyzing the Future Architecture of Steelmaking Enterprise in Japan

#### Eunah Kim

Assistive Personal Robots for Older Adults: Bridging the Divide Between Robotic Technology Development and End-Users in Practical Applications

## James Jaehak Kim

Using a System-Theoretic Approach for Cyber Mission Assurance of the Royal Canadian Air Force Over the Horizon Radar System

## Thitisak Kittipeerapat

(September, 2022) A Holistic View of Factors Impacting the Adoption of Lessons Learned Management Systems

## Jarod Roan Kramer

(See also Naval E., Course II) Investigating the Use of Inductive Transfer Learning and RNN to Quantify Extreme Event Statistics of Ship Motions

## Heng Huan Allan Law

(February, 2023) How Can Companies Adopt DT (Digital Twin) Technologies to Minimize Physical Prototyping by Maximizing Virtual Development and Testing within the Digital Twin Models?

#### Chiwon Lee

(February, 2023) Understanding Gen-Z College Student Needs Regarding Social Media Apps through a Case Study on Bondit, a Social Media App for College Students

# Sheng-Hung Lee

(September, 2022) (See also S.M., Course II) Human-Centered System Design for an Aging Population: An Experimental Study of Footwear Design

## Jason John Lehman

(September, 2022) Driving Optimization Centered Upstream Petroleum Operations in the Denver-Julesburg Basin

Damien Gordon Lewke Enhancing Cyber Resilience through Benchmarked Cyber Metrics

# Shao Cong Lim

(September, 2022) A Case for Pre-Trained Language Models in Systems Engineering

## Sabrina Woro Anggraini Listyo

Product to Platform Strategy: Transitioning COVID-19 Citizen Tracing Product to Centralized Telemedicine Platform in Indonesia

## Jason Paul Lowery

(February, 2023) Mutually Assured Preservation: Bitcoin and the Future of National Strategic Defense

## Eishi Majima

A Case Study of Project Management of COVID-19 Vaccination in Japan

#### Khaalid Persaud Juggan McMillan (February, 2023)

Data Center Carbon Accouting, Enterprise Digital Presence, and Sustainable Computing Trends

## Ryan Gerard Montvydas

Applying Systems Theory to Analyze Cyber Resiliency of Naval Engineering Systems

#### Adam Nahari (February, 2023) Harnessing External Data in Public and Private Market Investing

## Kosuke Nakajima

Evaluation of Real-Time Bridge Monitoring and Repair Management System Using Digital Twin Framework

#### Masumi Nomura

Analysis and Comparison of the Creation of University Spin-off Startups in Deep Tech between the United States and Japan

## Tatsuya Osugi

Systems Architecting the Future of Construction Enterprise for Intrapreneurship

## Katherine Patricia Papageorge

(September, 2022) A Systems Approach to Understanding Gender Inequity in Engineering

#### **Jose Ignacio Parada** (February, 2023)

Cybersecurity in Machine Learning

# Jason V. Paul

(September, 2022) Strategic Management of R&D Capabilities with Agent Based Modeling

## **Alexander James Pinigis**

Systemic Issues of Evaluating and Retaining Army Talent

## **Orson Samuel Porter**

(February, 2023) A Systemic View to Acquiring Innovation: How the US Air Force Invests in the Private Sector to Advance Innovation

#### Andrea Quiros Balma

Responsible Design: Design Methods for Anthropocentric Sustainable Futures

## **Benjamin Sterling Radelet**

(September, 2022) Quantifying Technology Management in the Energy Transition: Evidence from the Oil & Gas Industry

#### Jahanara Rahemtulla

Assessing the Impact of Vaccinations and AI-Based Screening on Cervical Cancer Prevention, in Low Resource Settings

# Amir Ali Ravassipour

(September, 2022) Strategic Funding of Emission Reducing Projects of a Crude Oil Refining Plant

### **Evelyn Ruff**

Surrogate Neural Networks for Efficient Simulation-Based Trajectory Planning Optimization

# William Kolbe Patrick Schwab

(September, 2022) Carbon Capture Technology for Natural Gas Power Plants: Selection Techniques and Implementation Strategies for a Real-World Scenario

#### Shi Shu

(February, 2023) The Impact of Mental Model in Older Adults Experience of Digital Games

#### Natha Singhasaneh

Climate Change Conversations with Children: Making Sustainability Meaningful, Tangible, and Actionable (with A. Crease)

#### Akshit Singla

(September, 2022) Systems Thinking Applied to Digital Divide

#### Pedro Soto

(September, 2022) Architecture Evaluation for Extended Reality Devices

#### Zachary Sternberg

Information Design Considerations for Effective Communication of Sustainability Metrics

#### Koji Takahashi

Developing Enterprise Architecture for Railway Machinery Engineers

#### **Benny Jun-Hong Tang**

(See also S.M., Course VI) VisText: A Benchmark for Semantically Rich Chart Captioning

# Arman Tanzharikov

(September, 2022) Reduction of Greenhouse Gas Emissions Using the Sustainable Systems-Thinking Approach by Utilizing Cost-Effective Hydrogen Production with a Lower Environmental Footprint

#### Mark Joseph Tozzi

(September, 2022) Strategic Value of Flexibility: Case of Execution and Technology Choice for Carbon Capture

#### Abhishek Uppal

Investigate and Analyze the Impact of Electronification in Fixed Income Bond Markets and Equity Stock Markets via ARIES Framework

# Manasi Atul Vaidya

Data Privacy Communications in Smart Home Technology for Older Adults: Evaluation, User Attitudes and Concerns, and Design Implications

## Ignacio Salvador Vazquez Rodarte

(September, 2022) Instrumenting Sensemaking for Engineering Teamwork

#### Jordan S. Wachs

(February, 2023) Development of a Cislunar Space Situational Awareness Architecture Using Real Options to Address Cost and Performance Uncertainties

## Kai Yee Wan

(See also S.M., Course VI) Simultaneous Localization and Calibration in a Wireless Network of Uncooperative Receivers

#### **Eric James Young** (See also Naval E., Course II) Rapidly Estimating Swarm Resource Needs Through Autonomous Simulation

# Master of Science in Transportation

#### Paris Charitatos Course XI Splitting Rides in Transit Deserts: Ride-Splitting Dynamics in Chicago Before, During and After the Pandemic

### Emma K. DeSoto

Course I (September, 2022) Evaluating the Impacts of Mobility-as-a-Service in Prototypical North American Cities via Agent-based Simulation

#### Xiaotong Guo

Course XI Enhancing the Shared Mobility Market: Dissolving Market Segmentation and Understanding Market Friction

#### Yuzhu Huang

Course XI Understanding Bus Operations Using High-Resolution Vehicle Location Data

#### Spencer Thomas McDonald

Course I (See also S.M., Course XVI) Optimizing Urban Air Mobility Operations in a Corridor Network

#### Daniel Michael O'Neil, Jr.

Course XI Post-COVID Transit Fares for Riders and Recovery

#### **Emma Pauline Swarney**

Course XI Measuring Place-Based Transit Service Equity in Chicago

# Naval Engineer

Course II Department of Mechanical Engineering

## John Harris Cathcart IV

(See also S.M., Course II) Integration and Implementation of Conceptual Design Tools for Naval Warships

#### Kelsey O'Brien Cathcart

(See also S.M., Course II) Detrainment and Settling of Sediment in Turbidity Currents: A Study to Inform Deep Seabed Mining

#### Camilo Duque Londoño

(See also S.M., Course II) A Hydrogel Adhesive Marine Sensing System: Design, Mechanism and Applications Jarod Roan Kramer (See also S.M., Engineering and Management) Investigating the Use of Inductive Transfer Learning and RNN to Quantify Extreme Event Statistics of Ship Motions

#### Lucas Kistner Stone

(See also S.M., Course II) Oscillating Energy Harvester for UUV Applications

Jillian Marie Uzoma

(See also S.M., Course II) Predicting Interactions Between Energy Saving Devices on Surface Ships

## Alexander Joseph Wunderlich

(See also S.M., Course II) Feasibility Study of a Linear Generator Wave Energy Converter With Adaptive Bistable Control

#### **Eric James Young**

(See also S.M., Engineering and Management) Rapidly Estimating Swarm Resource Needs Through Autonomous Simulation

# **Electrical Engineer**

Course VI Department of Electrical Engineering and Computer Science

#### Erik Karl Saathoff

(February, 2023) Inrush Transient Generation and Line Impedance Estimation (S.M. thesis, February 2021)

Master of Engineering in Computer Science, Economics, and Data Science Course VI-14

Dina A. Atia Evaluating Bias in Machine Learning-Enabled Radiology Image Classification

**Orrie B. Page** How More Equitable Assignment Mechanisms Can Increase School-level Segregation

# SCHOOL OF HUMANITIES, ARTS, AND SOCIAL SCIENCES

# Master of Science in Economics Course XIV

Department of Economics

**Indira Puri** (See also Ph.D., Course XIV) Simplicity and Probability Weighting in Choice Under Risk

# Master of Applied Science in Data, Economics, and Development Policy Course XIV Department of Economics

Kumar Abhinav (September, 2022)

Faris Abdulaziz AlWohaibi (September, 2022)

Yann Bourgeois (September, 2022)

Mohamed El Habib Chenguiti Ansari (September, 2022)

Chun Man Chow (September, 2022)

Amschel Nathaniel de Rothschild (September, 2022)

Tomáš Dulka (September, 2022)

**Chuka Dean Ezeoguine** (September, 2022)

**Tom Mansfield Harris** (September, 2022)

Massimiliano Dhikara Hasan (September, 2022)

Rodolfo Ilizaliturri Lopez (September, 2022)

Michael Adam Jarrell (September, 2022) Shahzor Khan (September, 2022)

Angelo Kisil Marino (September, 2022)

Laura Lahoz González (September, 2022)

Nathan Lazarus (September, 2022)

Cheng Wei Lee (September, 2022)

Luis Ernesto Lopez de Rivera Munoz (September, 2022)

Leonardo Enrico Marchioro Mendes (September, 2022)

Farhad Panahov (September, 2022)

Emily Ann Porter (September, 2022)

Anjaly Simon Poruthoor (September, 2022)

**Eder Alfonso Redondo Santos** (September, 2022)

**Cyrus Graham Reginald** (September, 2022)

Max Benjamin Resnick (September, 2022)

Ilias Suvanov (September, 2022)

Marc G Tan (September, 2022)

Claudia Marcela Ulloa Zuluaga (September, 2022)

Michael Ya Akov van Niekerk (September, 2022)

Anna Vdovina (September, 2022) Linxi Wang (September, 2022)

Master of Science in Political Science Course XVII Department of Political Science

Lauren David (September, 2022) Needles in a Haystack: Perceptions of Deservingness on the Implementation of Harm Reduction Programs in the American Midwest

Milain David Fayulu (September, 2022) Asymmetric Network Ties to Elite American Universities Create Differential Access to Venture Capital in Africa

**Julian Todd Rippy** (September, 2022) A Mixed-Methods Approach to Force Estimation in Military Operations Other Than War

# Master of Science in Science Writing Course XXIW Program in Writing and Humanistic Studies

**Leah Campbell** (September, 2022) The Toxic Legacy of the Gold Rush

**Iris Megan Crawford** (September, 2022) A Solution in the Sea. Commercial Kelp Farming was Recently Legalized in New York State - Can it Help Solve Environmental and Economic Woes?

James Ryan Dinneen (September, 2022) The Primary Prevention: What's Causing the Rise in Type 1 Diabetes—And Can it be Stopped?

Shelby Nicole Evergreen (September, 2022) Think 'Zebra'

58 School of Humanities, Arts, and Social Sciences

## Emma Grace Foehringer Merchant

(September, 2022) 'Burning Issues': Incarcerated Firefighting Programs in the U.S.

**Maria Anjelika Parazo Rose** (September, 2022) When the Waters Came

## Grace Carolyn van Deelen

(September, 2022) The Spirit in the Science: Wild Rice Conservation through Tribal-University Partnerships in Minnesota

#### Shafaq Zia

(September, 2022) Scrambling for Care: Autism in Rural America

## **Master of Science in Linguistics**

Course XXIV Department of Linguistics and Philosophy

**John Joseph Dennis** Mi'kmaq Motherese Language

**Masa Mocnik** (September, 2022) Existential Belief and Epistemic Modals

# <u>Master of Science in</u> <u>Comparative Media Studies</u>

Program in Comparative Media Studies

#### Srushti Santosh Kamat

(September, 2022) Virtual Production and Atmospheres of Change

# Ambar Reyes

(September, 2022) Los Delivreros: Labor, Platforms, and Transnational Flows of Information in Latin American Gig Workers

#### **Annis Rachel Sands**

(February, 2023) Eliminating the Thorn in the United States' Side: Media Propaganda and the Grenada Experiment

# Master of Science in Science, Technology, and Society

Course STS Program in Science, Technology, and Society

# Steven Gonzalez

(September, 2022) Ethnography as Craft: Rendering the 'Emic' Space of a Server Farm Using a 3 -D Printer

# Rustam Khan

Apartheid in Schaarbeek: Belgian Migrant Labor and Human Rights in Europe's Carbon Transition, 1945-1973

## Yui Leh Timothy Loh

(September, 2022) Language in Medical Worlds: Hearing Technology for Deaf Jordanian Children

# Gabrielle Lydia Marie Robbins

(September, 2022) X Disease | Disease X: Medical Mystery-Solving and Epidemiological Change

Chayanon Ruamcharoen

(September, 2022) Tropicalizing the Portable Radio

**Caroline Celeste White-Nockleby** (February, 2023) "A Resource in and of Itself": Grid-Scale Batteries and the Politics of Storage

# Di Wu

(September, 2022) Assisting Technology: Disability Expertise and Labor in Artificial Intelligence (AI) Data Work in China

# SLOAN SCHOOL OF MANAGEMENT

Master of Business	Omar Hans Figueroa	Ya Yui Sandra Lam
<u>Administration</u> Course XV-A (Sloan Fellows)	Jose Oswaldo Gonzalez Moreno	Luís da Cunha Lamb
Sloan School of Management	Taira Goto	Krispian Caspar Lawrence
Deepti	Kamila Theresa Guerra	Chenise Roddey LeDoux
Mahelaqua	Gerardo Manuel Guerrero Quichiz	Hyon Lee
Nahoko Abe	Seema Gupta	Kung-Yun Lin
Taiwo Oluwamayowa Ajetunmobi	Mikkel Gabriel Manahan Gutierrez	Li Lin
Keisuke Akiyoshi	Soungah Serephina Ha	Cameron William Lothridge
Keith Edwin Anderson, Jr.	Kevin Christopher Hansom	Gianfranco Lucchesi
Raafet Amine Azzouz	Kazuto Christopher Higuchi	Ryan Charles Lynch
Aizhan Balabatyrova	Candice Marie Hinds	Dwip Ratan Mahajan
Guilherme Nunes Martin Bianco	Laura Elaine Holberger	Mohammad Suleman Jehangir Malik
Amruta Madhav Borwankar	Ben Benjamin Ifrach	Hila Marcus
Andy Aristides Canales	Yoshihide Iijima	Morgan Marie McCray
Bindu Priya Chanagala	Karen Kumakura Inomata	Masanori Misu
Daniel Charles	Aditi Jha	Michael Geoffrey Morlino, Sr.
Joel Chastain	Ki Youn Jung	Mahua Mukherjee
Muhammad Ehsan Che Munaaim	Ifeoluwakiitan Kalejaiye	Ryota Nakamura
Pengfei Chen	Jihoon Kim	Wu Wei Ngau
Karen da Silva Mendonca Correa	Thomas Kyumwa Kisimbi	Kentaro Ode
Kirsten Dotson	Li Min Janicia Koh	Kentaro Ogawa
Rod Ebrahimi	Yuka Kojima	Yuri Ogiso
Osayuki Daniel Eguasa		Priscilla Ong
Amir Elkabir	<b>Koichiro Cory Kondo</b> The Coordination Imperative: A Comprehensive Approach to Align	U U
Kristen Sarah Ellefson	Customer Demand and Inventory Management for Superior Customer Experience in Retail (with A. Vicente)	Oghenekevwe Serena Ovbije Dimitrios Papalexopoulos

Francisco José Pérez-Ojeda Rodríguez	Ye Tian
Luke R. Petersen	Emre Tok
Chieu L. Pham	Kenta Uch
Kishan Jitendra Popat	Ogheneteg
Andrianiaina Rajaobelina	Brian Den
Nitin Rakheja	Fei Wang
Amiya Ranjan	Vicky Xia
Rafael Rodrigues Alves da Rocha	Eshrat Wa
Ryutaro Sakaguchi	Haojie Xu
Eric Andrés Salazar Molinares	Takeshi Ya
Charles Michael Salmon	Chau-Shya
Gabriel San Román Pacheco	Shinichiro
Dilnoza Satarova	Tan Yi Lin
Zeeshan Haider Shaikh	Krisha Lyı
Lara Monteiro da Silva	<u>Master o</u>
Inder Preet Singh	Manage Course >
Suhel Yasin Soudagar	Sloan Sch
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Zhenhua Sun	Course >
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	Hatem Ab
Ayako Tanaka	
Ayako Tanaka Yuichi Tanaka	Arun Kun
	Arun Kum Mudassar
Yuichi Tanaka	Arun Kun

nre Tok enta Uchida ghenetega Timothy Uvieghara ian Dennis Lee Via cky Xiaoqing Wang hrat Waris ojie Xu keshi Yamaguchi au-Shyang Yang inichiro Yasui n Yi Ling risha Lynne Zagura laster of Science in lanagement ourse XV-A (Sloan Fellows) oan School of Management quar A. Pervaaz thenticity in the Workplace, Is it aster of Business dministration ourse XV-E (Executive) oan School of Management tem Abouelenein run Kumar Adat udassar Ahmed

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Yoon Sang Ahn

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Tanya Hingorani	Kristina Masson	Philip Rigueur
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Ana Teresa Alvarez Hernandez

Matheus Alves Fonseca

Sumayah Abdullah Alzamil

Roshni Amin

Caroline Church Andersson

Santiago Andrade Aparicio (See also S.M., Course XXII) Technical and Commercial Feasibility Assessment of Nuclear Microreactors as a Clean Energy Source for Data Centers and Mining Sites

Kathryn Elizabeth Angevine (See also S.M., Operations Research) Multi-Modal Transit Time Prediction for E-Commerce Fulfillment Optimization and Carbon Emissions Reduction

Casilda Angulo Obieta Aditya Kumar Anguria Sean Patrick Antonuccio Ogechukwu Venessa Anyene Bibi Fatima Arabzada Osvaldo Sebastián Araya Varas Nayeli Guadalupe Arellano Martinez (See also S.M., Course I) Visual Sort Marker Digitization in Sort Center Operations

Adegboyega Olayode Asanpaola

Felipe Emilio Asfura Manzur

John Franklin Averill, Jr.

Daniel Mengistu Ayane (See also S.M., Course VI) Inference of the Novel Coronavirus 2019 in Patients Fitted with Boston Scientific Medical Hardware

Diana Esmat Shohdy Ayoub

Zeynep Ece Aytug

Khadija Ba

Neelesh Bagga

Adam Harrison Barber (See also S.M., Course II) Modeling Passenger Electric Vehicle Charging Demand with Machine Learning Using Telematics Data and Temperature

John Thomas Clarke Barstow (See also S.M., Course XVI) Application of Systems-Theoretic Process Analysis to Work Movement in Production Systems

Kate Elana Bartick

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Atikhun Boonchian
<b>Phiphat Boonperm</b> (February, 2023)
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Juan Pablo Borrero Cordova
<b>Mercer Renée Borris</b> (See also S.M., Course VI) AI in the Cath Lab: Implications of Clinical AI-Enabled Assistance for Intravascular Ultrasound Procedures
Peris Nyaboe Bosire
Stephanie Irion Boulger
Eliza Susanne Bragg
Renan Bragion Bicudo
Nahom Haile Brhane
Emily R. Bridges
O'Shae Malik Bridges
Samuel Nathan Broner
Francisco Jose Bruna Lagos
Nicolás Buero Viana
Gregory Steven Campo
Diego Carballo Hevia
<b>Christopher Taylor Carr</b> (February, 2023) (See also S.M., Real Estate Development)
Courtney Tighe Carrabino
Robert Alexander Carraway
<b>Gregory Alan Cass</b> (See also S.M., Course I) Driving Growth Through Sales and Operations Planning, Inventory Management, and Supply Chain Expansion

German Andrés Castaño Mancera Caterina Leuzzi Castellano Maria del Coro Celigueta Azurmendi Sarah Melissa Centanni Iheb Sadok Chalouat Saejal Chatter Natalie Alyssa Chehrazi (See also S.M., Course II) Driving the Future of Long-Haul Trucking: Realizing the Potential of Battery Electric Vehicles through an Analysis of Financial and Environmental Impacts Jane Chen Joyce Jy Chen Tzu-Chiao Chen Yu Chen Qinyi Chew Luka Chomich Victor Hing Shing Choy Chia-Han Chung Jinryang Chung Alice Cima Matthew Jonathan Cohen Elias Cohen Mizrahi Hannah Gail Constantakis Hunter Joseph Conti Madeleine Margaret Cooney Gabriel Hashimoto Cordaro

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(See also S.M., Course II) Sustainability Analytics – Meeting Carbon Commitments Most Efficiently

Yiyi Dong

Francisco Dubournais Donoso

Michael Ryan Duch	Belén Gallego Vara	<b>Ethan Logan Greene</b> (See also S.M., Course II)
Rebecca A. Durr	Viktoria Galperina	(See also S.M., Course II) Development of a Student Operated Production Facility Using Discrete Event Simulation and Continuous Improvement
Anna Kathleen Eckhoff	Evan Gao	
Kathleen Theresa Egan	José Gaytán de Ayala Roca de Togores	James Sylvester Guerin
Alain El Khoury	Olajumoke Yetunde Gbeleyi	Amitabh Guha Roy
Angeles Elias	Elorm Mortia Gbordzoe	<b>Toni-Rose Maico Guiriba</b> (See also S.M., Course II)
<b>Nicholas Francis Esposito</b> (See also S.M., Course II) Make vs. Buy Optimization for Industrial Distribution and Manufacturing	<b>Margaret Calliope Georgiadis</b> (See also S.M., Engineering and Manage- ment)	Improving Supply Chain Resiliency through Aseptic Connector Alignment and Standardization
Company	Boyana Svetoslavova Georgieva	<b>Jianduo Guo</b> (February, 2023)
Clara Estol	Benjamin R. Gertner	Pulkit Gupta
Mimi Peng Fan	Mainak Ghosh	Sahil Gupta
Steve T. Fan	John Michael Gibbons	Jose Guzman Ossandon
Ross Mulder Feehan	Aseem Goel	Jonas Richard Hauser
Catherine Tilghman Fernan	Stephanie Janet Gomez Menzies	Robert Massey Hayes
Albert B. Fernandez	Zhen Zhen Gong	Ruizhe He
Roderic Iñaki Figueroa	Amber Michelle Gonzales-Vargas	Ziv Heimlich Shtacher
Ayesha Forbes	Agustin Gonzalez de Abiega	Lauren Marie Heintz
Sarah Graff Fox	Kyle Lindon Gordon	(See also S.M., Course VI) Scenario Analysis of Profitability through
Santiago Frias Silva	Daniela Gorza	Simulation of Different Business Contract Models
Ayaka Fujisaki	<b>Fiona Grace Gouthro</b> (See also S.M., Course II)	Marcos Helbling
<b>Avery Gilbert Fullerton</b> (See also S.M., Course II)	Innovation Process at Omnichannel DCs Undergoing Shifts in Channel Mix	Cindy Alejandra Heredia
Ship-Pack Optimization to Minimize Fulfillment Costs from Manufacturing to Customer	Rishabh Goyal	Karen Joy T. Hernandez
Francisco Javier Galindez de Jesus	Austin Elliott Gray	<b>Zoe L. Hinton</b> (See also S.M., Course II) Enhanced Digital Capability through the
(See also S.M., Course II) Integrated Energy Modelling Tool for Electric and Gas Infrastructure Decision Support	Alexander Robert Green	Use of Simulation in Footwear Product Creation
Gonzalo Galindo Barragan		<b>Yuki Hirai</b> (February, 2023)

Diana Dac Ho

James Patrick Hogan

Michael Joseph Hogan

Peter Gerald Holt

Minwoo Hong

Jacob Tyler Hopkins (See also S.M., Course II) Performing Actionable Evaluations of Sustainability Investments

**Ori Hoxha** (See also S.M., Course II) External Network Manufacturing Capacity Design and Procurement in the Pharmaceutical Industry

Andrew Jonathan Hu

**Carmen Satia Hundley** 

Scott Samuel Hungerford (See also S.M., Course I) Improving Throughput in an Aluminum Rolling Mill Using Modeling and Optimization Techniques

Ángel Ibañez

Mariam Elisabeth Ibrahim (See also S.M., Course II) Developing a Data-Driven Strategy for In-Process Quality Assurance for Additive Manufacturing

Kunio Iwata

**Peter Emanuel Jacobson** (See also S.M., Course I) Optimization of Private Equity Investments for Industrial Carbon Emission Reduction

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Haidar Jamal Baba

**Francis James** 

Nicole Jamgotchian

Sebastião Maria Jardim de Sousa

Brayden E. Jaw

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Justin Leon Jiang (See also S.M., Course II) Digital Supply Chain Connectivity and Capacity Analysis for Strategic Production Planning in Biosurgery Oxidized Regenerated Cellulose

Wenfei Jiao

Yuri Jimbo

Elena Jin Li

**Rutvik Viren Joglekar** 

**Paul Mitchell Johnson** (See also S.M., Course XVI) Parametric Study of Environmental Testing in Satellite Manufacturing

Gina Pathikulangara Joseph

Ellis José Juan, Jr.

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Chanitra Kaewprasertsri

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Pran Karnchanapimolkul

Nattapat Kasemsarn

Rachit Kejariwal

Benjamin Elliott Kekeisen

Brian Francis Kelly

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Hydrogen, Electric, and Diesel Fuel in Medium - and Heavy-Duty Transportation Applications

Dongyoung Kim

Hyun Jin Kim

Jisu Kim

Emil K. Kiroff

Scarlett E. Koller (See also S.M., Course XVI) Applying Satellite Broadband Connectivity with Edge Computing to New Industry Verticals

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Jomi Saxl Kramer (See also S.M., Course II) Outside Inside, Inside Around: Leveraging External Innovation Through Strategic Investment

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Erika Kurachi

Miles David Kurtz (See also S.M., Course I) Planogram Optimization in Support of Inventory Management

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Kyna Liu

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**Taylor Pano Lyberger** (See also S.M., Course I) Towards Zero Defect Manufacturing in Multi-Stage Production Systems

Lisa Ann Lyons

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**Bayazid Malikov** 

Samuel Jack Mansberg

Joshua Marcovici

Cristóbal Marín Siebel

Dragana Marinkovic

Eduardo Maristany (See also S.M., Course XVI) Economic Analysis of 3D-Printed Ceramic Cores for Gas Turbine Investment Castings

Phillip C. Marmolejo

**Clemens Antoine Laurent Martin** 

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Somesh Mohapatra (February, 2023) AI-Assisted Reaction Impurity Prediction and Inverse Structure Elucidation

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Justin Daniel Mueller

Michaela Elizabeth Murr (See also S.M., Course VI) Predictive Models from Real-time Sensors in Process Analytical Technology Initiative in Biomanufacturing

Madison Christine Myers (See also S.M., Course II) On-Site Hydrogen Production via Distributed Methane Pyrolysis

Maria Corina Negron Pardo

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Karen Eberechukwu Onwuegbule	Yashvardhan Shobhit Rajan	
Joseph Paul Samuel Orsborn	Maria Teresa Ramos Tormo	Omer Sheik Sanjay
José Luis Ortiz Rosero	Toni Ramsay	Khalyani Sankar
Wayne Donbi Pak	Jose Manuel Rebolledo Velasco	Paula Santamaria-Missetzis
<b>Jennifer Lindsey Pandolf</b> (See also S.M., Course XVI)	Gabriela E. Redhead	Caio Marques dos Santos
Investigation of Model-Based Systems Engineering Integration Challenges and	Almog Reshef	Avika Saraf
Improvements	Yong-Min Sol Rhee	Julie Marie Sarasua
Santiago Pardo Sanchez	Shira Helen Rieke	(See also S.M., Course I) Network Optimization of a D2C
Vicente Parodi	Nahel Rifai Burneo	Supply Chain Subject to Changing Cost Conditions and Consumer Preferences
Juan Pascual Orero	Carlos Rios Riviello	Julia Sarra Rizkallah
Gabriel Joseph Pascualy (See also S.M., Course VI) Enabling Actionable Maintenance Analytics with Ontology-Driven Natural Language Processing	Maria Paula Rivarola Monzon	Hugh Michael Satterthwaite
	Alp Rona Rodopman	Paige Ann Schank
Kyle Arjun Patel	Alexander Rodosky	Joshua Henry Scharf
Vivek Pejaver	Flavio Rodrigues Alves Neto	<b>Lisa Grace Schleuter</b> (See also S.M., Course I)
Stwart Peña Feliz	Aldo Fernando Rodriguez Garcia	Site Material Supply Chain Optimization
Jonathan Perel	Elena Micky Rodriguez-Villa	Matthew Joseph Schmidt
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Kana Shinozaki

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Isaac F. L. Silberberg

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Mihiraan Malhotra Singh

Allison Rhett Smedberg (See also S.M., Course II) From Bench to Bucks: An Approach and Case Study in Scaling Additive R&D Technologies within the Aerospace Industry

Alexandra Elizabeth Smith

Sharul Sonthalia

Nicha Sophonpanich

Ardeshir Hormazd Sorabjee

Tiya Sosothikul

Siddarth Sreeram

Hunter Lauren Stahl

Alexandra June Steckmest

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Haryuni Sumawijaya

Julianna Kathryn Swartzenberg

John Bartholomew Sweeney V

Max Alan Tanski (See also S.M., Course VI) Making More Miles: Automating Load Selection, Truck Dispatch, and Backhaul Activation in Outbound Logistics Operations **Kevin Michael Tenny** (See also Ph.D., Course X)

**Jason Anthony Teno** (See also S.M., Course I) Optimizing Apparel Pack Sizes Across Retailer's North America Network

**Kaya Thomas Wilson** (See also S.M., Course I) Automated Guided Vehicles for Material Flow in Fulfillment Centers

## Peter Song Tian

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**Jacob Andrew Tomasovic** (See also S.M., Course II) Manufacturing Integration: Managing Throughput and Organizational Change

Stephen C. Townsend

Wellington Trindade Vitorino, Sr.

Tiffany Tsai

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**Onyinyechi Chiemela Ukaire** (See also S.M., Course VI) Predicting and Preventing Unsafe Events at an Enterprise

#### Shaundra Julianne Ullman

Shelby Madison Unger (See also S.M., Course VI) Analysis of Respiratory Time Series Data for Breathing Comfort Detection Prior to Sleep Onset During APAP Therapy

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<u>Master of Science in</u> <u>Management</u> Course XV Sloan School of Management

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**Qichen Li** (February, 2023)

Ruochen Li (February, 2023)

Yifan Li (February, 2023)

#### Yuxuan Li

Manan Nimeesh Lilani (February, 2023)

**Huben Liu** (February, 2023) Dislocation

**Pei Liu** (February, 2023)

Zheyuan Liu

### Mouad M'Ghari

Muzhi Ma (February, 2023)

### Nathan Mellinger

Hugues Armano Isidore Menguy

Henry Tao Ning (February, 2023)

**Johan August Ottosen** (February, 2023) Mariel Padilla Lujano (February, 2023)

Vivek Palisetty (February, 2023)

Yuan Pei (February, 2023)

**Jing Peng** (February, 2023)

Feipeng Qi (February, 2023)

Jingya Qi (February, 2023)

Samson Qian (February, 2023) Multi-Agent Deep Reinforcement Learning and GAN-Based Market Simulation for Derivatives Pricing and Dynamic Hedging

Xinyue Qian (February, 2023)

Kaizhong Qiu (February, 2023)

Wynston Avery Reed

Filip Ryzner (February, 2023)

**Ahmed Magdy Sharafeldin** (February, 2023)

Iain Martin Sheerin (February, 2023)

Jiatong Shi (February, 2023)

Yunqi Shi (February, 2023)

Yue Shu (February, 2023)

Hanxiao Si

Xinpei Sun (February, 2023) Hizkia Adrian Susanto (February, 2023)

**Colin Thomas Suvak** The Impact of Fiscal and Monetary Policy on the Cross-Sectional Value Factor

Emil John Syrén (February, 2023)

Zimo Tang (February, 2023)

Jimmy Teng (February, 2023)

**Lizbeth Joana Tirado Torres** (February, 2023)

Di Wang (February, 2023)

Yijin Wang (February, 2023)

Yufeng Wang (February, 2023)

Yutong Wang (February, 2023)

Ziyan Wang (February, 2023)

Ziyi Wang (February, 2023)

**Chiharu C. Watanabe** (February, 2023)

Salomon Zacharias Wiedemer

Carsten Willer (February, 2023)

Sam Wolotsky (February, 2023)

Puyue Wu (February, 2023)

Yu Xie (February, 2023)

Haishan Xu (February, 2023) Runqin Yan (February, 2023)

Xiyu Yan (February, 2023)

Ningxin Yang (February, 2023)

Ruizhou Yang (February, 2023)

**Jie Yin** (February, 2023)

**Omer Yurtsever** (February, 2023)

#### Danyang Zhang

Haiyi Zhang (February, 2023)

Haohao Zhang (February, 2023)

Rongrong Zhang (February, 2023)

Ruoyu Zhang

**Tianyi Zhang** (February, 2023)

Xinle Zhang (February, 2023)

Zeyi Zhang (February, 2023)

Zhehao Zhang (February, 2023)

Changming Zhao (February, 2023)

**Jiulei Zhu** (February, 2023) Crises Learning under Diagnosticity

Yifei Zou (February, 2023) Master of Science in Management Studies Course XV-S Sloan School of Management

**Rodrigo Ignacio Berner Bensan** Matching Individual Environmental, Social and Governance Revealed Preferences with Investment Portfolios

**Jinlan Chen** The Drivers of ESG Index Outperformance: A Transatlantic Analysis of US and European Markets

Yanzhang Chen Designing an Investment Research System for Asset Management Based on Natural Language Processing

**Yu Tai Chen** Gamification in Marketing to Increase Customer Retention

Ki Chun Ian Chiang Investment Landscape of Generative AI and Its Market & Governmental Impact on Society

**Eduardo Garza de Zamacona** Why do Platforms Fail

Ningxin Huang Emerging Markets Penetration Strategy in the Deglobalization Era - A Case Study of the NEV Industry in Southeast Asia

Hongxuan Jia Impact of Restricted Stock Grant (RSG) Issuance on Financial Performance of US Software and IT Companies

**Ryan Idris Kamaruddin** ChatGPT and the Future of Management Consulting: Opportunities and Challenges Ahead

**Jocelyn Ann Keyser** Reinventing the (Spinning) Wheel: A Systems Map to Scale Bacterial Grown Materials

Yvette Man-yi Kong Strategizing the Value Proposition of Higher Education for Generation Alpha: The Business Case of Community

#### Alice Salomee Morgensztern Design of a Robust Qualitative Method for the Assessment of the MIT REAP Impact on Formerly Engaged Innovation Ecosystems

### Felix Claus Julius Naerger

Evaluation of Residential Real Estate Energy-Rating Systems in Germany, and their Applicability to the United States

#### Krittamate Pramniya

Overview of Non-Fungible Tokens: Key Features, Opportunities, Challenges, and Business Use Cases

#### Mathilde Camille Julie Robinet

Unveiling the ESG Landscape: Exploring Revealed Preferences through Archetypal Analysis of Decision-Makers in Environmental, Social, and Governance Causes

#### Xiaoyu Shi

A Study of the Individual Pension Funds Allocation Strategy in China

#### Loan Tricot

Effects of Redistributive Tax Policies on Fuel Demand

### Tristan Pierre Gaëtan Watel-Dehaynin

Moving Towards a More Sustainable Model of Energy Production & Consumption: A Case for Indonesia

#### **Tianyi Zhang**

Application of A System Dynamic Model on U.S. Regional Real Estate Industry

#### Xianmin Zhu

Analysis of the Prospects and Development of China's Online Healthcare Industry: Opportunities and Challenges

### <u>Master of Science in</u> <u>Management of Technology</u> Course XV-A

Sloan School of Management

Anderson da Silva Pereira Inclusive FinTech – How Financial Technologies Can Tackle Global Problems

### Ângelo José Bergamaschi Vicente

The Coordination Imperative: A Comprehensive Approach to Align Customer Demand and Inventory Management for Superior Customer Experience in Retail (with K. Kondo)

# Master of Science in Management Research

Course XV Sloan School of Management

# Xi Chen

(September, 2022) Bridging Time Preferences and Social Preferences

### Luca Gius

(February, 2023) Great Ideas (Don't) Sell Themselves: The Disclosure Paradox in Digital Startups Auctions

### **Graelyn Blatner Humiston**

(February, 2023) Revealing the Illusion of Explanatory Depth May Hinder Persuasion

### Audrey Mang

Do Women Ask? Gender Differences in Applying for Internal Job Openings

#### Claire C. McKenna

(September, 2022) Workplace Change in an Age of Insecurity: Evidence from a U.S. Automaker

### Andrew Minster

(February, 2023) Compounding Ambiguity: When Workers Leave Meaningful Work

### Hirotaka Miura

(February, 2023) Mutual Information as a Predictor of Group Performance: Application to Soccer Teams

# Zanele Tanyaradzwa Munyikwa

(February, 2023) The Last Mile of Broadband: Examining the Economic Impacts of the Connect America Fund

#### Christina Angie Nguyen

(September, 2022) Do Externally-Hired Managers Increase Innovation? Evidence from the U.S. Government

# Hong Yi Tu Ye

How Many Americans Work Remotely? A Survey of Surveys and Their Measurement Issues

#### Yevhenii Usenko

Inflation, Taxation, and Corporate Investment in the U.S. During the Great Inflation

#### John Ross Wilson

The Propensity to Borrow out of Expected Permanent Income

# Master of Science in Operations Research

Sloan School of Management in conjunction with the Schwarzman College of Computing

### Kathryn Elizabeth Angevine

(See also M.B.A., Course XV) Multi-Modal Transit Time Prediction for E-Commerce Fulfillment Optimization and Carbon Emissions Reduction

### Riade Benbaki

Topics in Sparsity and Compression: From High Dimensional Statistics to Overparametrized Neural Networks

### Gauthier Marc Benoit Guinet

(September, 2022) Bandit Problems Under Censored Feedback

### Gianpaolo Luciano Rivera

(See also M.B.A., Course XV) Data-Driven Clustering for New Garment Forecasting

### Martin Rame

Branch-and-Price for Prescriptive Contagion Analytics

### Rebecca Penny Reubenstein

Equitable Community Health Worker Deployment in Sub-Saharan Africa: A Modeling Framework for Stochastic Health Progression

### **Benjamin Marlowe Siegel**

Innovative Supply Chain Cyber Risk Analytics: Unsupervised Clustering and Reinforcement Learning Approaches

# SCHOOL OF SCIENCE

### Master of Science in Chemistry

Course V Department of Chemistry

### **Gisselle** Pombar

(September, 2022) Studies on Organophosphorus Catalyzed C(sp3)-H Amination for the Synthesis of Benzimidazoles

# Master of Science in Biology

Course VII Department of Biology

### David Gorestki

(September, 2022) Engineering Apomixis in Plants to Stabilize Intergenerational Hybrid Vigor

### Master of Science in Brain and Cognitive Sciences

Course IX Department of Brain and Cognitive Sciences

### Margaret Grace McCue

Mechanisms Underlying Learning Mediated Plasticity in the Adult Mammalian Olfactory Bulb

### Master of Engineering in Computation and Cognition

Course VI-9 Department of Brain and Cognitive Sciences

### Tyler H. Allen

Leveraging BERT Extractive Summarization to Predict the Future of Law

### Alexandra Berg

Single-Nucleus Multi-Region Transcriptional Characterization of Four-Repeat Taupathic Neurodegenerative Disorders

### Curtis C. Chen

(See also S.B., Course VI-9) A Purely Granularity-Based Account of Positive-Form Gradable Adjectives

### **Benjamin Dwyer**

Enabling Secure Vehicle to Infrastructure Communications via Two-Factor Authentication

**Anne Hanako Kimura Harrington** Exploring the Properties of Human Vision in Computer Vision

### Caleb M. Harris

(September, 2022) Medship: Affective Computing for Building Empathetic Behaviors Toward Patients with Substance Use Disorders

### Doron Hazan

DECIDE-ML: A Data-Driven Exploration and Clustering Informed Decision-Making Framework for Sustainable City Metabolism and Climate Mitigation

Annika L. Heuser (September, 2022) Transformer-Maze

Michelle S. Hung Modeling Social Actions as Communication about Relationships

### Linette Kunin

(See also S.B., Course VI-9) Conceptual and Perceptual Novelty as Distinct Motives of Infant Looking

### Vinh Phúc Lê

Neuron Image Segmentation via Colorization

### Noah H. Lee

(February, 2023) A Ubiquitous Spectrolaminar Motif of Local Field Potential Power across Cortex

### Mariela M. Perez-Cabarcas

Multimodal Physiological Signal Sensing for Continual Learning in an Implantable Device to Predict and Respond to the Onset of Hypoglycemia

# Master of Science in Climate Physics and Chemistry

Course XII Department of Earth, Atmospheric, and Planetary Sciences

### Christine M. Padalino

The Effect of Eddies on  $\mathrm{fCO}_2$  in the North Pacific Surface Ocean

### Master of Science in Earth and Planetary Sciences

Course XII Department of Earth, Atmospheric, and Planetary Sciences

### Jing Jian

(September, 2022) Probing Mantle Transition Zone beneath Central Pacific Using PP-Precursors

# AWARDED JOINTLY WITH THE WOODS HOLE OCEANOGRAPHIC INSTITUTION

# Master of Science in Mechanical Engineering

### <u>Master of Science in Chemical</u> <u>Oceanography</u>

#### **Gregory A. Burgess** Course II (September, 2022) *In-situ* Characterization of Sea State with Improved Navigation on an Autonomous

Underwater Glider

### Nicholas Craig Evans

Course II (September, 2022) A Practical Search with Voronoi Distributed Autonomous Marine Swarms

### Kathryn Melissa Fung

Course II (September, 2022) Oceanic Ambient Noise in the Arctic on the Chukchi Shelf: Broadband Characteristics and Environmental Drivers

### Nicholas Edward Swanda

Course II (September, 2022) High Frequency Acoustic Propagation and Modeling in Stratified Estuaries

### Peter Thomas Ventola

Course II (September, 2022) Developing the Next Generation of Autonomous Underwater Gliders

# Master of Science in Electrical Engineering and Computer Science

Daniel Xin Yang Course VI Rank2Reward: Learning Robot Reward Functions from Passive Video

### Solomon T. Chen

Course XII (February, 2023) Quantifying Pelagic Primary Production via Automated In-Situ Incubation Systems (PhRePhOx)

### Luciana Villarroel

Course XII (September, 2022) The Fate of Anthropogenic Nitrogen in a Redox Stratified Pond: An Isotopic Approach

# Master of Science in Marine Geology and Geophysics

### Faith Joan Duffy

Course XII (September, 2022) An Inverse Modeling Approach to Investigate Deep Ocean Ventilation from Radiocarbon Records

### Master of Science in Aeronautics and Astronautics

### Amy Ngo Phung

Course XVI Enabling Robotic Manipulation in Remote Environments with Shared Autonomy

# SCHOOL OF ARCHITECTURE AND PLANNING, DOCTORAL

### Doctor of Philosophy

School of Architecture and Planning

### Rounaq Basu

Housing Policies

(September, 2022) Thesis in the field of Urban Science and Planning submitted to the Department of Urban Studies and Planning: Planning Sustainable Cities: Coordinating Accessibility Improvements with

#### **Guillermo Roman Bernal Cubias**

Thesis in the field of Media Arts and Sciences: Into the Wild: Deploying Brain and Physiological Sensing in Natural Environments to Enhance Wake and Sleep Cognitive Behavioral Studies

#### Christianna Susan Bonin

(February, 2023)

Thesis in the field of Architecture: History and Theory of Art submitted to the Department of Architecture: Decentering Russia: Art and Empire, 1900-1973

### **Daniel Matthew Calacci**

Thesis in the field of Media Arts and Sciences: Centering Communities in Research and Technology Design

#### Juliana Mae Cherston

(September, 2022) Thesis in the field of Media Arts and Sciences: The Well-Dressed Spacecraft: Textiles for Cosmic Dust Metrology

### Jungwoo Chun

(February, 2023) Thesis in the field of Environmental Policy and Planning submitted to the Department of Urban Studies and Planning: New Roles for Intermediaries: The Case of Community Owned Solar Energy Development

### Pedro Antonio Colon-Hernandez

Thesis in the field of Media Arts and Sciences: A Conversational Agent for Dynamic Procedural Interactions

### Alexandra Courcoula

(February, 2023) Thesis in the field of Architecture: History and Theory of Art submitted to the Department of Architecture: The Benaki Museum in Interwar Greece: Constructing Greek Art & the Greek Nation After the Fall of the Ottoman Empire

### Silvia Danielak

(February, 2023) Thesis in the field of Urban and Regional Planning submitted to the Department of Urban Studies and Planning: The Infrastructure of Peace: Socio-Spatial Planning in UN Peace Operations

### Dinuki Nushelle de Silva

(September, 2022) Thesis in the field of Architecture: History and Theory of Architecture submitted to the Department of Architecture: Moving Experiences: Traveling Museum Exhibitions and the Infrastructures of Cultural Globalization

### Duygu Demir

(September, 2022) Thesis in the field of Architecture: History and Theory of Art submitted to the Department of Architecture: A Syncretic

Modernism: Articulations of Painting in

### Asmaa Elgamal

Turkey (1910s-1940s)

Thesis in International Development and Planning submitted to the Department of Urban Studies and Planning: Landing Security: Risk, Endogeneity, and the Archives of Colonialized Planning in Morocco

### Daniel L. Engelberg

Thesis in the field of Urban and Regional Planning submitted to the Department of Urban Studies and Planning: Embracing the Uncertain Future: Three Papers of Uncertainty in Analysis, Planning, and Policy-Making

### Ziv Green Epstein

Thesis in the field of Media Arts and Sciences: The Dynamics of Attention in Digital Ecosystems

#### Matthew Robert Groh

Thesis in the field of Media Arts and Sciences: The Science and Art of Human and Artificial Intelligence Collaboration

### Iheb Guermazi

(September, 2022) Thesis in the field of Architecture: History and Theory of Architecture submitted to the Department of Architecture: The Spiritual Turn: Modern Sufism and the Study of Islamic Art

#### Adam Jedidiah Haar Horowitz

(September, 2022) Thesis in the field of Media Arts and Sciences: Interfacing with Dreams: Novel Technologies and Protocols for Targeted Dream Incubation

### **Alexandros Haridis**

(September, 2022) Thesis in the field of Architecture: Design and Computation submitted to the Department of Architecture: Visual Calculating Aesthetic Value: Formal Models of Description and Evaluation for Aesthetic Systems

### Yijiang Huang

(September, 2022) Thesis in the field of Architecture: Building Technology submitted to the Department of Architecture: Algorithmic Planning for Robotic Assembly of Building Structures

#### Mohamed Abdelbagi Ismail

(February, 2023) Thesis in the field of Architecture: Building Technology submitted to the Department of Architecture: Reshaping Concrete: Empowering Development through Low-Carbon Structural Design

### **Caroline Adair Jaffe**

(September, 2022) Thesis in the field of Media Arts and Sciences: An Environmental and Economic Systems Analysis of Land Use Decisions in the Massachusetts Cranberry Industry

### Sooyeon Jeong

(September, 2022) Thesis in the field of Media Arts and Sciences: Designing and Deploying Robotic Companions to Improve Human Psychological Wellbeing

### Eliyahu Keller

(September, 2022)

Thesis in the field of Architecture: History and Theory of Architecture submitted to the Department of Architecture: Drawing Apocalypse: Architectural Representation in the Nuclear Age and the Imagination of the End

#### Nicolas Alexander Lee

Thesis in the field of Media Arts and Sciences: Endless Ecosystems - Designing a World without Waste

#### Nicole L'Huillier Chaparro

(September, 2022) Thesis in the field of Media Arts and Sciences: Membranas

#### Babak Manouchehrifar

(September, 2022) Thesis in the field of Urban and Regional Studies submitted to the Department of Urban Studies and Planning: Urban Planning and Religious Practice: Three Challenges

### **Caroline Elizabeth Murphy**

(February, 2023)

Thesis in the field of Architecture: History and Theory of Architecture submitted to the Department of Architecture: Waters and Welfare: Rivers, Infrastructure, and the Territorial Imagination in Grand Ducal Tuscany, ca. 1549–1609

### Deborah Anne Najjar

(September, 2022) Thesis in the field of Media Arts and Sciences: CRISPR Biosensors for Resource-Limited Nucleic Acid Detection

### Anastasia Katharine Ostrowski

Thesis in the field of Media Arts and Sciences: How do we Design Robots Equitably?: Engaging Design Justice, Design Fictions, and Co-Design in Human-Robot Interaction Design and Policymaking Processes

### Soyoung Park

(September, 2022)

Thesis in the field of Urban and Regional Planning submitted to the Department of Urban Studies and Planning: Transclave Economy: Immigrant Business Survival in an Era of Pandemic

#### Wenzhe Peng

Thesis in the field of Architecture: Design and Computation submitted to the Department of Architecture: Visual Experience in Temporal Situational Context: Method of Matching and Modeling in Design

### **Diego Ignacio Pinochet Puentes**

Thesis in the field of Architecture: Design and Computation submitted to the Department of Architecture: Computational Gestural Making: A Framework for Exploring the Creative Potential of Gestures, Materials, and Computational Tools

### Jack Burnett Reid

Thesis in the field of Media Arts and Sciences: Using Earth Observation-Informed Modeling to Inform Sustainable Development Decision-Making

#### Arianna Salazar Miranda

Thesis in the field of Computational Urban Science and Planning submitted to the Department of Urban Studies and Planning: Building Sustainable and Inclusive Cities: Analyzing the Impact of Planning Paradigms in the US

### Chandra Shekhar

(September, 2022) Thesis in the field of Public Policya and Environmental Philosophy submitted to the Department of Urban Studies and Planning: State, Street, and Public Goods: A Theory of Misgovernance

### Tay Won Shin

Thesis in the field of Media Arts and Sciences: Ultrastructural Membrane Expansion Microscopy

#### Samuel Lee Spaulding

(September, 2022) Thesis in the field of Media Arts and Sciences: Lifelong Personalization for Social Robot Learning Companions: Interactive Student Modeling Across Tasks and Over Time

### **Tristan Breaden Swedish**

(September, 2022) Thesis in the field of Media Arts and Sciences: Computational Discovery of Hidden Cues in Photographs

### Darien Alexander Williams

Thesis in the field of Urban and Regional Planning submitted to the Department of Urban Studies and Planning: Locating a Black Planning Tradition and Spatializing Black Nationalism

# SCHWARZMAN COLLEGE OF COMPUTING, DOCTORAL

### **Doctor of Philosophy**

Schwarzman College of Computing

### Chin-Chia Hsu

(September, 2022) Thesis in the field of Social and Engineering Systems and Statistics submitted to the Institute for Data, Systems, and Society: Misinformation, Persuasion, and News Media on Social Networks

#### Yan Jin

(February, 2023) Thesis in the field of Social and Engineering Systems submitted to the Institute for Data, Systems, and Society: Voting, Social Networks, and Polarization: Models for Information Aggregation in Social Settings

#### Yi Sun

(February, 2023) Thesis in the field of Social and Engineering Systems submitted to the Institute for Data, Systems, and Society: Algorithmic Fairness in Sequential Decision Making

### Max Aidas Vilgalys

(September, 2022) Thesis in the field of Social and Engineering Systems submitted to the Institute for Data, Systems, and Society: Essays on Measuring Climate Change Damages and Adaptation

### Mengying Wu

(February, 2023) Thesis in the field of Social and Engineering Systems submitted to the Institute for Data, Systems, and Society: Local Official and Polluter Accountability in China's Environmental Inspections

### Yunzong Xu

Thesis in the field of Social and Engineering Systems and Statistics submitted to the Institute for Data, Systems, and Society: Data-Driven Dynamic Decision Making: Algorithms, Structures, and Complexity Analysis

# SCHOOL OF ENGINEERING, DOCTORAL

### **Doctor of Science**

School of Engineering

### Michael George Fifield

Thesis in the field of Aeronautics and Astronautics: Adaptive and Responsive Design Under Uncertainty for Resource-Constrained Small Satellites

### Jiyun Kang

(September, 2022) Thesis in the field of Materials Science and Engineering: Microscopic Strain Localization and Damage in Multi-Phase Alloys

#### **Konstantinos Keremidis**

(February, 2023) Thesis in the field of Structures and Materials submitted to the Department of Civil and Environmental Engineering: Kinetic Temperature of Structures for Resilience, Instability and Failure Analysis of Building Systems

#### So Yeon Kim

Thesis in the field of Materials Science and Engineering: Design and Development of Damage-Tolerant Active Materials

### Runze Liu

Thesis in the field of Materials Science and Engineering: Design of 3D Complex Nanostructures Using Block Copolymer Self-Assembly

### Haoxue Yan

(September, 2022) Thesis in the field of Materials Science and Engineering: Beyond Embrittlement: In-Situ Explorations of Hydrogen Effects Near the Boundaries

### **Doctor of Philosophy**

School of Engineering

### Raj Abhijit Dandekar

(September, 2022) Thesis in the field of Computational Science and Engineering submitted to the Department of Civil and Environmental Engineering: A New Way to Do Epidemic Modeling

#### **Thomas Joseph Abitante**

Thesis in the field of Bioastronautics submitted to the Harvard-MIT Program in Health Sciences and Technology: Evaluation of Neuromuscular Electrical Stimulation as a Bone Loss Countermeasure on a Long Duration Mars Mission

### Sayed Mazdak Abulnaga

Thesis in the field of Electrical Engineering and Computer Science: Volumetric Mapping for Medical Imaging and Geometry Processing

#### Bernardo Aceituno Cabezas

Thesis in the field of Mechanical Engineering: An Optimization Approach to Certified Manipulation

### Julius Adebola Adebayo

(September, 2022) Thesis in the field of Electrical Engineering and Computer Science: Tools for Debugging Machine Learning Models

### Aviv Adler

(February, 2023) Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: The Traveling Salesman Problem for Systems with Dynamic Constraints

### Monica Agrawal

(February, 2023) Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Towards Scalable Structured Data from Clinical Text

### Rashed Abdulazeez Al-Rashed

(September, 2022) Thesis in the field of Mechanical Engineering: An Assessment of Community-Scale Electrodialysis Desalination Systems and Improved Scale Mitigation through Pulsed Operation

### Juliette Suzanne Jaqueline Alain

(September, 2022) Thesis in the field of Materials Science and Engineering: From Elastic Electrodes to Fabric Systems

### Ferran Alet i Puig

(September, 2022) Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Extending the Spectrum of Learning to Learn

### Maryam Ali A Alghannam

(February, 2023) Thesis in the field of Computational Science and Engineering submitted to the Department of Civil and Environmental Engineering: Mathematical and Computational Modeling of Injection-Induced Seismicity

#### Mohammad Ayman Alkhadra

(September, 2022) (See also S.M., Course X-A) Thesis in the field of Chemical Engineering: Selective Ion Separations Using Shock Electrodialysis

#### Omar Suliman H Alolayan

Thesis in the field of Civil and Environmental Engineering: Machine Learning Based Algorithms for Improving Forecasting in Subsurface Energy Resources

#### **Emily Morgan Alsentzer**

(September, 2022) Thesis in the field of Medical Engineering and Medical Physics submitted to the Harvard-MIT Program in Health Sciences and Technology: Few Shot Learning for Rare Disease Diagnosis

#### Jason Max Altschuler

(September, 2022) Thesis in the field of Electrical Engineering and Computer Science: Transport and Beyond: Efficient Optimization over Probability Distributions

#### Yamin Ishraq Arefeen

Thesis in the field of Electrical Engineering and Computer Science: Combining Computational Techniques with Physics for Applications in Accelerated MRI

#### **Toros Arikan**

Thesis in the field of Electrical Engineering submitted to the Department of Electrical Engineering and Computer Science: Localization and Structure Learning in Reverberant Environments

### Alexandre Armengol Urpi

Thesis in the field of Mechanical Engineering: Capturing Tacit Knowledge of Experts through the Study of Visual Attention: Applications for Human Expertise and AI

#### Naveen T. Arunachalam

Thesis in the field of Chemical Engineering: Autonomous First-Principles Design of Transition Metal Complexes

### Adam Alexander Atanas

Thesis in the field of Computational and Systems Biology: Brain-Wide Representations of Behavior Spanning Multiple Timescales and States in C. elegans

### **Kyriakos Axiotis**

(September, 2022) Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Flows, Submodularity, Sparsity, and Beyond: Continuous Optimization Insights for Discrete Problems

### Saumil Bandyopadhyay

Thesis in the field of Electrical Engineering submitted to the Department of Electrical Engineering and Computer Science: Accelerating Artificial Intelligence with Programmable Silicon Photonics

#### **Carlos Barajas**

(September, 2022) Thesis in the field of Mechanical Engineering: Modeling and Controlling Resource Loading in Bacterial Genetic Circuits

### Maria Bauza Villalonga

(September, 2022) Thesis in the field of Mechanical Engineering: Visuo-Tactile Perception for Dexterous Robotic Manipulation

### Amanda M. Beck

(February, 2023) Thesis in the field of Electrical Engineering and Computer Science: State Space Methods Using Biologically-Relevant Generative Models to Analyze Neural Signals

#### Haley Katherine Beech

Thesis in the field of Chemical Engineering: Synthesis, Characterization, and Theory of Polymer Gels to Elucidate Topology-Property Relationships

### Zied Ben Chaouch

(September, 2022) Thesis in the field of Electrical Engineering and Computer Science: Risk and Uncertainty in Healthcare Finance, Investment Management, and Asset Pricing

#### Joseph Don Berleant

Thesis in the field of Biological Engineering: DNA-Based Non-Orthogonal Interaction Networks: Theory, Design, and Application to DNA Computing and Memory

### Marc Dylan Berliner

(February, 2023) Thesis in the field of Chemical Engineering: Simulating, Controlling, and Understanding Lithium-Ion Battery Models

### **Eric Alexander Bersin**

(September, 2022) Thesis in the field of Electrical Engineering and Computer Science: Techniques for Deployed Quantum Networks with Solid-State Defect Centers

#### Matthew Ryan Billingsley

(February, 2023) Thesis in the field of Chemical Engineering: Mathematical Tools for Discontinuous Dynamical Systems

### **Molly Anne Bird**

(September, 2022) Thesis in the field of Biological Engineering: Investigating the Role of RNA-Binding Proteins in Tumor Response to DNA Damage-Inducing Chemotherapy

### Jonathan Birjiniuk

(February, 2023) Thesis in the field of Electrical Engineering and Computer Science: Modeled and Unmodeled Approaches for Quantification of the Cardiac Autonomic Nervous System

#### **Bodhisatwa Biswas**

(September, 2022) Thesis in the field of Applied Plasma Physics submitted to the Department of Nuclear Science and Engineering: Impact of Wave-Filament Scattering in the Scrape-Off Layer during Lower Hybrid Current Drive

### **Colin Edward Bittner**

(September, 2022) Thesis in the field of Chemical Engineering: Self-Assembling Peptide Nanofibers RADA16 and IEIK13 for Rapid Hemostasis

#### Jessica Danielle Boles

(September, 2022) Thesis in the field of Electrical Engineering submitted to the Department of Electrical Engineering and Computer Science: Power Electronics Meet Piezoelectrics: Converters, Components, and Miniaturization

#### **Thomas Emile Bourgeat**

(February, 2023) Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Hardware Specification and Verification in Rule-Based Hardware Designs Languages

#### **Roberto Brenes**

(September, 2022) Thesis in the field of Electrical Engineering and Computer Science: Microscale Energy Transport in Lead Halide Perovskites

### Michael Cian Brennan

Thesis in the field of Computational Science and Engineering: Gradient-Based Dimension Reduction for Bayesian Inverse Problems and Simulation-Based Inference

### Arthur Brown

Thesis in the field of Aeronautics and Astronautics: Towards Practical Fixed-Wing Aircraft with Electroaerodynamic Propulsion

### Noam Buckman

(February, 2023) Thesis in the field of Mechanical Engineering: Semi-Cooperative Planning in Mixed Human-Autonomous Environments

#### Dylan Maxwell Cable

Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Computational and Statistical Methods for Analysis of Spatial Transcriptomics Data

#### Alejandro D. Cabrales Hernandez

Thesis in the field of Space Systems submitted to the Department of Aeronautics and Astronautics: Orbit and Attitude Control for (non-) Rotating Space-Based Telescopes Utilizing Reflectivity Control Devices

#### Francis Cangialosi

Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Privacy-Preserving Video Analytics

#### **Taylor Marie Cannon**

Thesis in the field of Medical Engineering and Medical Physics submitted to the Harvard-MIT Program in Health Sciences and Technology: Volumetric Optical Imaging of Tissue Microstructure for Grading of Dysplasia in vivo

#### Yunteng Cao

(September, 2022) Thesis in the field of Structures and Materials submitted to the Department of Civil and Environmental Engineering: Precision Delivery of Multi-Scale Payloads to Tissue-Specific Targets in Plants

#### **Rebecca Joy Carlson**

Thesis in the field of Health Sciences and Technology submitted to the Harvard-MIT Program in Health Sciences and Technology: Functional Genomic and Image-Based Screening Approaches for Probing Host-Pathogen Interactions

#### **Brandon Michael Carter**

Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Interpretations of Machine Learning and Their Application to Therapeutic Design

### Thérèse Carter

(September, 2022) Thesis in the field of Civil and Environmental Engineering: Investigating the Representation of Smoke and Its Implications for Air Quality and Climate

### **Grissel Cervantes Jaramillo**

(February, 2023) Thesis in the field of Health Sciences and Technology submitted to the Harvard-MIT Program in Health Sciences and Technology: Suppression of the Ubiquitin Ligase Function of FBXW7 Accelerates Metastatic Progression of Pancreatic Ductal Adenocarcinoma

### Maytee Chantharayukhonthorn

Thesis in the field of Mechanical Engineering: A Hybrid Discrete and Continuum Framework for Multiscale Modeling

#### Brynmor Kentaro Chapman

(September, 2022) Thesis in the field of Electrical Engineering and Computer Science: A Dual Perspective on Computational Complexity

#### Alexis-Tzianni Charalampopoulos

Thesis in the field of Mechanical Engineering and Statistics submitted to the Department of Mechanical Engineering: Coarse-Grained Models for Prediction, Uncertainty Quantification, and Extreme Event Statistics of Turbulent Flows in Engineering and Geophysical Settings Using Physics-Consistent Data-Driven Closures

#### Aaron Solomon Charous

Thesis in the field of Mechanical Engineering and Computational Science submitted to the Department of Mechanical Engineering: Dynamical Reduced-Order Models for High-Dimensional Systems

### Keith Ming Hong Cheah

(See also S.M., Course X-A) Thesis in the field of Chemical Engineering: Protein-Based Degrader Strategies Against Oncogenic RAS

#### Irene Yunshien Chen

(September, 2022) Thesis in the field of Electrical Engineering and Computer Science: Machine Learning Approaches Towards Equitable Healthcare

#### Jingkai Chen

(September, 2022) Thesis in the field of Autonomous Systems submitted to the Department of Aeronautics and Astronautics: Hybrid Concurrent Planning with Heterogeneous Robot Teams for Timed Goals

### Liang-Hsun Chen

(September, 2022) Thesis in the field of Chemical Engineering: Nanoemulsion-Loaded Hydrogels for Advanced Pharmaceutical Formulations

### Lijie Chen

(September, 2022) Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: New Connections Between Hardness and Pseudorandomness

#### Melinda Chen

(February, 2023) Thesis in the field of Medical Engineering and Medical Physics submitted to the Harvard-MIT Program in Health Sciences and Technology: QUiLT (Quantitative Ultrasound in Longitudinal Tissue Tracking): Stitching 2D Images into 3D Volumes for Organ Health Monitoring

#### Pin-Yi Chen

(February, 2023) Thesis in the field of Analytics for Supply Chain submitted to the Department of Mechanical Engineering: Order Fulfillment Algorithms for Online Retail

#### **Ruicong Chen**

Thesis in the field of Electrical Engineering and Computer Science: Analog-to-Digital Converters for Secure and Emerging AIoT Applications

#### Yuankang Chen

Thesis in the field of Air-Breathing Propulsion submitted to the Department of Aeronautics and Astronautics: Technology Demonstration of a Megawatt-Class Integrated Motor Drive for Aircraft Propulsion

### Zhantao Chen

(September, 2022) Thesis in the field of Mechanical Engineering: Machine Learning for Phonon Thermal Transport

#### Lillian Tiffany Chin

Thesis in the field of Electrical Engineering and Computer Science: Function Follows Form: An Exploration of Robotic Embodiment through Geometry

### Stephen Chou

(September, 2022) Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Format Abstractions for the Compilation of Sparse Tensor Algebra

### Chun Man Chow

(February, 2023) Thesis in the field of Chemical Engineering: Nanoporous Graphene Membranes for Health and Environmental Applications

### Matthew Ruiyan Chua

(September, 2022) Thesis in the field of Electrical Engineering submitted to the Department of Electrical Engineering and Computer Science: Charge Carrier Balance in Lead Halide Perovskite Light Emitting Diodes

### Chanwoo Chung

(February, 2023) Thesis in the field of Electrical Engineering and Computer Science: Implementing Accelerated Key-Value Store: From SSDs to Datacenter Servers

#### Minju Chung

Thesis in the field of Chemical Engineering: Electrochemical Alkene Epoxidation Using Water as the Oxygen Source

### Yunsie Chung

(February, 2023) Thesis in the field of Chemical Engineering: Developing Predictive Tools for Solvent Effects on Thermodynamics and Kinetics

### Ondrej Čierny

Thesis in the field of Aeronautics and Astronautics: Sensorless Wavefront Correction Algorithms for Free-Space Optical Communications

### Marco Colangelo

Thesis in the field of Electrical Engineering submitted to the Department of Electrical Engineering and Computer Science: Superconducting Nanowire Technology for Microwave and Photonics Applications

#### Michael Joseph Coulombe

Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Algorithms and Hardness in Single and Multiplayer Games and Other Limited Computational Models

### Andrew Thomas Cummings

Thesis in the field of Aeronautics and Astronautics: Development of a Special Purpose End-to-End Satellite Constellation Design Methodology

### Yuval Dagan

(February, 2023) Thesis in the field of Electrical Engineering and Computer Science: Statistical Estimation from Dependent and Adversarial Data

### Wangzhi Dai

(September, 2022) Thesis in the field of Electrical Engineering and Computer Science: Tackling Key Challenges to Guide Clinical Decisions in Cardiovascular Diseases

### **Thomas Defferriere**

(September, 2022) Thesis in the field of Materials Science and Engineering: Defects and Ionic Transport at Reduced Temperatures – Electric Field and Optical Control on Nanoscopic Spatial Scales

### Ellen M. DeGennaro

(February, 2023) Thesis in the field of Health Sciences and Technology submitted to the Harvard-MIT Program in Health Sciences and Technology: Clonal Architecture and Genetic Regulation of the Developing Mammalian Cerebral Cortex

### **Elad Deiss-Yehiely**

(February, 2023) Thesis in the field of Polymers and Soft Matter submitted to the Department of Materials Science and Engineering: Controlling the Bio-Nano Interface via Engineered Layer-by-Layer Nanoparticles for Treatment of Biofilm-Based Infections

### Jose Pedro de Souza

(September, 2022) Thesis in the field of Chemical Engineering: Microscopic Physics of Electrical Double Layers

#### Jialin Ding

(September, 2022) Thesis in the field of Electrical Engineering and Computer Science: Instance-Optimized Database Indexes and Storage Layouts

### Huifeng Du

(September, 2022) Thesis in the field of Mechanical Engineering: Dynamic Studies of Instability-Triggered Intersonic Surface Detachment Waves in Soft Material Sliding

#### Max Atticus O'Rourke English

(September, 2022) Thesis in the field of Biological Engineering: Synthetic Biology Tools for Sensing and Evolving Microbes: CRISPR-Diagnostics and Transposon-Mediated Genome Re-Wiring

#### Andres Erbsen

(February, 2023) Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Foundational Integration Verification of Diverse Software and Hardware Components

#### Emre Ergeçen

Thesis in the field of Electrical Engineering and Computer Science: Ultrafast Probing of Nonlinear Dynamics in Quantum Materials: Beyond Linear Response Probes

### Amanda Lynn Facklam

(September, 2022) Thesis in the field of Biological Engineering: Uncovering Biological Mechanisms of Immunomodulatory Biomaterials for Encapsulated Cell Therapies

#### Alexis Maguin Fenton, Jr.

(September, 2022) Thesis in the field of Chemical Engineering: Voltammetric Methods Augmented with Physical Models and Statistical Inference

#### John Killian Feser

Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Inductive and Deductive Program Synthesis for Database Applications

### Samuel Frank

(February, 2023) Thesis in the field of Applied Plasma Physics submitted to the Department of Nuclear Science and Engineering: An Investigation of Full-Wave Effects on Lower-Hybrid Wave Propagation, Absorption, and Current Drive

#### Jonathan Elliott Frankle

(February, 2023)

Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: The Lottery Ticket Hypothesis: On Sparse, Trainable Neural Networks

#### **Cory Vincent Frontin**

(February, 2023) Thesis in the field of Aerospace Computational Engineering submitted to the Department of Aeronautics and Astronautics: Error Behavior and Optimal Discretization of Chaotic Differential Equations

#### Xinzhe Fu

(February, 2023) Thesis in the field of Communications and Networks submitted to the Department of Aeronautics and Astronautics: Learning-NUM: Utility Maximization in Stochastic Queueing Networks

### Axel Antonio Garcia Burgos

Thesis in the field of Aeronautics and Astronautics: Integral Quadratic Constraints and Safety Certificates for Uncertainty Characterization and Control Safety-Aware Filtering of Proximity Operations Between Satellites

#### Indie Camille Garwood

Thesis in the field of Health Sciences and Technology submitted to the Harvard-MIT Program in Health Sciences and Technology: Probing the Depths of Unconsciousness with Multifunctional Neurotechnology

#### Efrat Goffer

(February, 2023) Thesis in the field of Medical Engineering and Medical Physics submitted to the Harvard-MIT Program in Health Sciences and Technology: Optimization of Hemodynamics from Mechanical Support Devices in Cardiogenic Shock

#### Maxwell Philip Gold

(September, 2022) Thesis in the field of Computational and Systems Biology: Machine Learning Applications for Neurological Diseases

### Nicolás Gómez Vega

Thesis in the field of Aeronautics and Astronautics: Advances in Electroaerodynamic Thrusters for Aircraft Propulsion

#### Sheng Gong

(September, 2022) Thesis in the field of Materials Science and Engineering: Improving Supervised Machine Learning for Materials Science

#### Khloe Sandra Gordon Wei

Thesis in the field of Biological Engineering: Pooled Screening of Chimeric Antigen Receptor Signaling for Improved Clinical Function

#### Amy Greene

(February, 2023) Thesis in the field of Electrical Engineering and Computer Science: Calibration and Utilization of High-Fidelity Two-Qubit Operations

#### Ofer Grossman

Thesis in the field of Electrical Engineering and Computer Science: Pseudo-Determinism

#### Yuzhou Gu

Thesis in the field of Electrical Engineering and Computer Science: Channel Comparison Methods and Statistical Problems on Graphs

#### Webster Jingtao Guan

Thesis in the field of Chemical Engineering: Scalable Subcellular Resolution Mapping of the Human Brain

#### Rui Guo

(September, 2022) Thesis in the field of Mechanical Engineering: Chemistry, Transport and Function of Ionic Phases in the Solid Electrolyte Interphase on Lithium Metal Anodes

# Abhinav Gupta

(September, 2022) Thesis in the field of Mechanical Engineering and Computation submitted to the Department of Mechanical Engineering: Scientific Machine Learning for Dynamical Systems: Theory and Applications to Fluid Flow and Ocean Ecosystem Modeling

### Samarth Gupta

Thesis in the field of Civil Engineering and Computation submitted to the Department of Civil and Environmental Engineering: Large-Scale Optimization for Robust Multi-Class Prediction and Resource Allocation

#### Katie Soyoung Hahm

(February, 2023) Thesis in the field of Mechanical Engineering: In-Home Gait Health Monitoring Using Machine Learning and Ambient Sensing

#### **Rabab Haider**

Thesis in the field of Mechanical Engineering: Physics-Aware Optimization and Data-Driven Methods for Low-Carbon Power Systems

#### **Brady Meikle Hammond**

Thesis in the field of Mechanical Engineering: Real-time Autonomy and Maneuvering Simulation of an Unmanned Underwater Vehicle near a Moving Submarine using Actively Sampled Gaussian Process Surrogate Models

### Weiqiao Han

(February, 2023) Thesis in the field of Electrical Engineering and Computer Science: Risk Aware Planning and Probabilistic Prediction for Autonomous Systems under Uncertain Environments

#### Shivam Handa

(September, 2022) Thesis in the field of Computer Science and Engineering submitted to the Department of Electrical Engineering and Computer Science: Program Synthesis over Noisy Data

#### Ashley Jessica Hartwell

Thesis in the field of Mechanical Engineering: Design Optimization of Two-Way Spanning Concrete Systems for Low-Carbon, Context-Informed Construction

#### **Christian Alexander Haughwout**

(September, 2022) Thesis in the field of Space Systems submitted to the Department of Aeronautics and Astronautics: Small Satellite Closed Ecosystems as Enabling Platforms for Low-Cost In-Space Biological Research

#### **R**'mani Symon Haulcy

Thesis in the field of Electrical Engineering and Computer Science: AI-Based Speech Assessment of Cognitive Impairment Disorders

#### He He

(September, 2022) Thesis in the field of Transportation submitted to the Department of Civil and Environmental Engineering: Firms in Integrated Urban Models: Agglomeration Economies and the Dynamics of Employment Size Decisions

#### **Catherine Campbell Henry**

(February, 2023) Thesis in the field of Biological Engineering: Toward High-Throughput, Quantitative Platforms to Identify the Targets of Small Molecules

#### James Russell Hermus

(February, 2023) Thesis in the field of Mechanical Engineering: A Dynamic Primitives Hypothesis: A Descriptive Model of Human Physical Interaction

# Robert Gregory Hinshaw

(September, 2022) Thesis in the field of Bioastronautics submitted to the Harvard-MIT Program in Health Sciences and Technology: Biological Modeling of the Neural Response to Space Radiation and Its Interaction with Alzheimer's Disease Risk Genes

### Rebecca Marilyn Ho

Thesis in the field of Electrical Engineering submitted to the Department of Electrical Engineering and Computer Science: Driving Emerging Technologies From Concept to Reality: A Case Study of Carbon Nanotubes

#### Katharina Viktoria Hoebel

Thesis in the field of Medical Engineering and Medical Physics submitted to the Harvard-MIT Program in Health Sciences and Technology: Domain and User-Centered Machine Learning for Medical Image Analysis

#### Patrick Victor Holec

(September, 2022) Thesis in the field of Biological Engineering: Scalable Methods for Immune Repertoire Sequencing

### Tzu Ming Hsu

(September, 2022) Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Effective Modeling in Medical Imaging with Constrained Data

### Yiqun Hu

(September, 2022) Thesis in the field of Computational Science and Engineering submitted to the Department of Civil and Environmental Engineering: Learning Mixed Multinomial Logit Models

### Xin Huang

(September, 2022) Thesis in the field of Autonomous Systems submitted to the Department of Aeronautics and Astronautics: Diverse Behavior Prediction through Deep Hybrid Models

### Yimeng Huang

(February, 2023) Thesis in the field of Materials Science and Engineering: Polyanionizing Rocksalt Cathodes for Lithium-Ion Batteries

### Atalay Mert İleri

(February, 2023) Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Confidentiality Under Nondeterminism for Storage Systems

#### Katherine Ilia

(February, 2023) Thesis in the field of Biological Engineering: RNA-Level Controllers for Programmable Gene Expression in Mammalian Cells

### Mohammad Shafaet Islam

(February, 2023) Thesis in the field of Aerospace Computational Engineering submitted to the Department of Aeronautics and Astronautics: Accelerating the Jacobi Iteration for Solving Linear Systems of Equations Using Theory, Machine Learning, and High Performance Computing

#### Siddharth Srinivasan Iyer

(September, 2022) Thesis in the field of Electrical Engineering and Computer Science: Accelerating the Acquisition and Reconstruction of Spatio-Temporal MRI

#### Alex T. Jaffe

(February, 2023) Thesis in the field of Electrical Engineering and Computer Science: V for Venous Pressure

### Asmita Jana

(September, 2022) Thesis in the field of Materials Science and Engineering: Design of Surface and Bulk Interactions: A Computational Approach to Sustainable Energy

#### Siddhartha Visveswara Jayanti

(February, 2023) Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Simple, Fast, Scalable, and Reliable Multiprocessor Algorithms

#### Zi-Xun Jia

Thesis in the field of Mechanical Engineering: Intragastric Mechanical Systems for Dysmotility Diagnosis and Obesity Treatment

### **Brandon Michael Johnston**

Thesis in the field of Chemical Engineering: Development of Dendritic Polymers as a Modular Drug Delivery Platform for Avascular Tissues

### Nidhi N. Juthani

(See also M.B.A., Course XV) Thesis in the field of Chemical Engineering Practice submitted to the Department of Chemical Engineering: Extracellular Vesicle Capture and microRNA Detection

#### Soumya Kannan

Thesis in the field of Biological Engineering: Discovery and Characterization of Diverse Microbial RNA-Guided Systems

#### Krishan Kant

(February, 2023) Thesis in the field of Electrical Engineering and Computer Science: Bearingless Motor with Magnet Free Rotor and 6DoF Position Sensor for Extracorporeal Life Support

#### Neha Kapate

Thesis in the field of Medical Engineering and Medical Physics submitted to the Harvard-MIT Program in Health Sciences and Technology: Engineering Myeloid Cell Phenotype Using Cell Surface-Adhered Microparticles for Therapeutic Applications

#### Amir Hassan Karamlou

Thesis in the field of Electrical Engineering and Computer Science: Quantum Simulation of Many-Body Systems with Superconducting Qubits

#### Cody Jacob Karcher

(September, 2022) Thesis in the field of Aeronautics and Astronautics: An Optimization Centered Approach to Multifidelity Aircraft Design

### Colin Clancy Kelsall

(February, 2023) Thesis in the field of Mechanical Engineering: Design Challenges for Ultra-High-Temperature Energy Storage with Thermophotovoltaics

#### Eesha Khare

Thesis in the field of Polymers and Soft Matter submitted to the Department of Materials Science and Engineering: Mechanochemical Understanding of Metal-Coordinated Polymers Using Simulation and Experiment

#### Sameer Khurana

Thesis in the field of Electrical Engineering and Computer Science: Transfer Learning for Spoken Language Processing

#### Bobak Toussi Kiani

Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Horizons of Artificial Intelligence in Quantum Computation

### **Colin Younghun Kim**

Thesis in the field of Biological Engineering: Mechanisms of Enzyme Neofunctionalization in Plant Specialized Metabolism

### Dong Ki Kim

(February, 2023) Thesis in the field of Autonomous Systems submitted to the Department of Aeronautics and Astronautics: Effective Learning in Non-Stationary Multiagent Environments

#### Hyungseok Kim

Thesis in the field of Mechanical Engineering and Statistics submitted to the Department of Mechanical Engineering: Bioinstrumentation and Statistical Methods for Investigating Host-Microbial Interactions

### Jaehwan Kim

(February, 2023) Thesis in the field of Electrical Engineering and Computer Science: Monolithic Integration of Fluidics, Electronics, and Photonics using CMOS Foundry Processes

### Minah Kim

(September, 2022) Thesis in the field of Electrical Engineering and Computer Science: Design and Analysis of High-Stability THz Molecular Clock System

#### Samuel Kim

Thesis in the field of Electrical Engineering and Computer Science: Novel Approaches to Discovery and Optimization in Physics: Symbolic Regression, Bayesian Optimization, and Topological Photonics

#### Miriam Anne Kreher

Thesis in the field of Computational Nuclear Science and Engineering: Modeling Feedback Effects of Transient Nuclear Systems Using Monte Carlo

#### Arun Krishnadas

Thesis in the field of Mechanical Engineering and Computation submitted to the Department of Mechanical Engineering: Optimality of Human Acoustic Perception of Natural Sounds, and Violin Acoustics Elucidated with a Non-Corporeal Musical Instrument Made by Fully Air-Coupled Finite-Element-Modeling of the Titian Stradivarius

### Abinash Kumar

(September, 2022) Thesis in the field of Materials Science and Engineering: Structure-Property Correlations in Compositionally Complex Ferroelectrics

#### **Conner Samuel Kummerlowe**

(September, 2022) Thesis in the field of Computational and Systems Biology: High Throughput Measurement and Perturbation of Tissues and Tissue-Derived Cellular Models

#### Rebecca A. Kurfess

Thesis in the field of Mechanical Engineering: An Investigation of Polymer Support Structures In Metal Directed Energy Deposition

### Ukjin Kwon

(February, 2023) Thesis in the field of Electrical Engineering and Computer Science: Robust Ratiometric Sensor Design and a Long-Term Memory Genetic Toggle Switch Design Based on Mathematical Analysis

### John Robert Lake

(February, 2023) Thesis in the field of Mechanical Engineering: Physicochemical Interactions at Interfaces: Mass and Charge Transfer at Chemically Reacting Interfaces

#### Brianna Marie Lax

Thesis in the field of Chemical Engineering: Mechanistic Elucidation and Therapeutic Improvement of Anti-CTLA-4 Therapies

#### Elise Ledieu-Dherbécourt

(September, 2022) Thesis in the field of Environmental Biology submitted to the Department of Civil and Environmental Engineering: Lost In Starvation: How the Interplay between Physiology and Ecology Impacts Bacterial Persistence in a Patchy Landscape

### Sungkwon Lee

(February, 2023) Thesis in the field of Mechanical Engineering: A Unified Overlapping Finite Element Formulation

### Victor Julio Leon

(February, 2023) Thesis in the field of Mechanical Engineering: Active Interfaces: From Biointerfaces to Mineralization

#### **Bethany Rose Lettiere**

(February, 2023) Thesis in the field of Mechanical Engineering: Tailoring Mechanical Properties and Porosity in Laser Powder Bed Fusion by Spatial Manipulation of Feedstock Composition

#### Changhao Li

(February, 2023) Thesis in the field of Quantum Science and Engineering submitted to the Department of Nuclear Science and Engineering: Exploring Quantum Geometry and Quantum Sensing with Spin Defects in Diamond

#### Yifei Li

(September, 2022) Thesis in the field of Materials Science and Engineering: Developing Transition Metal Dichalcogenide Alloys for Applications to Integrated Photonics

#### Yunzhu Li

(September, 2022) Thesis in the field of Electrical Engineering and Computer Science: Learning Structured World Models From and For Physical Interactions

### Muyuan Lin

(September, 2022) Thesis in the field of Mechanical Engineering: Geometrically and Temporally Consistent Robot Perception

#### Bai Liu

(February, 2023) Thesis in the field of Communications and Networks submitted to the Department of Aeronautics and Astronautics: Optimal Control for Uncooperative Networks

#### Alex Lombardi

(September, 2022) Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Provable Instantiations of Correlation Intractability and the Fiat-Shamir Heuristic

### Seamus Joseph Holt Lombardo

Thesis in the field of Aeronautics and Astronautics: Remote Sensing and Integrated Systems Frameworks for Decision Support in Sustainable Development

#### Ang-Yu Lu

Thesis in the field of Electrical Engineering and Computer Science: Artificial Intelligence-Aided Synthesis and Characterization of 2D Materials

#### Kuangye Lu

Thesis in the field of Mechanical Engineering: Advanced Epitaxy on 2D Materials for Bottom-Up Heterointegration with Low-Defects and Membrane Production with High-Throughput

#### Yuxuan Lu

Thesis in the field of Air Transportation Systems submitted to the Department of Aeronautics and Astronautics: Market-Based and Policy-Based Conditional Demand Forecaster for Airline Revenue Management

#### Jaclyn R. Lunger

Thesis in the field of Materials Science and Engineering: Atom-by-Atom Designs of Metal Oxide Catalysts for the Oxygen Evolution Reaction

#### **Björn Malte Lütjens**

Thesis in the field of Autonomous Systems submitted to the Department of Aeronautics and Astronautics: Machine Learning Emulators for Accessible Climate Projections

#### Emi Alexandra Lutz

(September, 2022) Thesis in the field of Biological Engineering: Engineering Intratumoral Cytokine Therapies for Cancer

### Michael A. Luu

Thesis in the field of Aeronautics and Astronautics: Iterative Engineering, System Confidence, and In-Space Servicing Assembly & Manufacturing

#### Joseph Haleem Maalouf

Thesis in the field of Chemical Engineering: Experimental and Computational Electrochemistry to Move toward Plastics Circularity

#### Jonathan Vincent MacArthur

Thesis in the field of Aeronautics and Astronautics: Solid-State Flow Control for Ion Electrospray Propulsion

#### Corina Nicole MacIsaac

Thesis in the field of Medical Engineering and Medical Physics submitted to the Harvard-MIT Program in Health Sciences and Technology: Overcoming Diffusion Limitations in Encapsulated Cell Therapy for Type 1 Diabetes

#### Saurav Maji

Thesis in the field of Electrical Engineering and Computer Science: Energy-Efficient Security Solutions for Next-Generation Embedded Systems

#### Aleksandar Aleksandrov Makelov

(September, 2022) Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Towards Robust Machine Learning: Algorithms and Data

### Michael Vincent Martello

Thesis in the field of Civil and Environmental Engineering: Climate Change Adaptation Planning and Decision Making for Transit Infrastructure

### Kelly J. Mathesius

Thesis in the field of Space Propulsion submitted to the Department of Aeronautics and Astronautics: Integrated Design of Solid Rocket Powered Vehicles Including Exhaust Plume Radiant Emission

#### **Caroline Taylor McCue**

Thesis in the field of Mechanical Engineering: Controlling Protein and Cell Adhesion Through Interfacial Engineering for More Efficient Biomanufacturing

### Elaine D. McVay

(September, 2022) Thesis in the field of Electrical Engineering submitted to the Department of Electrical Engineering and Computer Science: Visible and Infrared Light Detection Using 2D Materials

### Lucas P. Medeiros

(September, 2022) Thesis in the field of Civil and Environmental Engineering: Understanding and Predicting Responses of Ecological Communities to Perturbations

#### **Keegan Leigh Mendez**

Thesis in the field of Medical Engineering and Medical Physics submitted to the Harvard-MIT Program in Health Sciences and Technology: Multifunctional Soft Robotic Devices and Cardiac Benchtop Models for Improved Therapy Delivery and Development

### Xianglin Meng

(September, 2022) Thesis in the field of Electrical Engineering and Computer Science: The Modeling Spectrum of Data-Driven Decision Making

### Yue Meng

(September, 2022) Thesis in the field of Civil and Environmental Engineering: Photoporomechanics: A New Technique to Explore Grain-Scale Mechanisms for Fluid-Driven Fractures in Granular Media

### Isaac Chartrand Meyer

(February, 2023) Thesis in the field of Nuclear Science and Engineering: Flux-Independent Uncertainty Propagation of Nuclear Cross Section Data Using the Windowed Multipole Formalism

### Lu Mi

(September, 2022) Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Towards a Fast Automatic Connectomics Pipeline using Deep Learning

#### Lucio Maria Milanese

Thesis in the field of Theoretical Plasma Physics submitted to the Department of Nuclear Science and Engineering: Turbulent Dynamics Under Two Ideal Invariants: Dynamic Phase Alignment in Plasmas and Nonionized Fluids

#### Alex Brandon Miller

Thesis in the field of Medical Engineering and Medical Physics submitted to the Harvard-MIT Program in Health Sciences and Technology: A Blood Exchange Method to Study Circulation Kinetics of Tumor Cells in the Blood

#### Nathaniel Loren Miller

(September, 2022) Thesis in the field of Medical Engineering and Medical Physics submitted to the Harvard-MIT Program in Health Sciences and Technology: On Epitope-Paratope Interactions of Emerging to Endemic Viruses

### **Rishabh Mittal**

Thesis in the field of Electrical Engineering submitted to the Department of Electrical Engineering and Computer Science: A Continuous-Time Pipelined ADC with Reduced Sensitivity to Clock Jitter

### Baichuan Mo

(September, 2022)

Thesis in the field of Transportation submitted to the Department of Civil and Environmental Engineering: Toward a Resilient Public Transportation System: Effective Monitoring and Control under Service Disruptions

#### Oscar Ricardo Moll Thomae

Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Efficiently searching for objects within large collections of image and video

#### **Duncan Matthew Morgan**

(September, 2022) Thesis in the field of Chemical Engineering: Integrated, Single-Cell Analysis of Transcriptional Phenotype and Clonotypic Identity

#### William Steven Moses

Thesis in the field of Electrical Engineering and Computer Science: Compiler Abstractions and Transformations to Reduce Programming Burden

#### Saleet Mossel

(September, 2022) Thesis in the field of Computer Science and Engineering submitted to the Department of Electrical Engineering and Computer Science: On Deniable Computation and Sublinear Graph Algorithms

### **Theodore Mouratidis**

(September, 2022) Thesis in the field of Aeronautics and Astronautics: Low Temperature Solder Demountable Joints for Non-Insulated, High Temperature Superconducting Fusion Magnets

#### Saviz Mowlavi

(September, 2022) Thesis in the field of Mechanical Engineering: Forward and Inverse Problems in Mechanics: from a Single to Thousands of Interacting Bodies

### Mohamad Ali Toufic Najia

(February, 2023) Thesis in the field of Medical Engineering and Medical Physics submitted to the Harvard-MIT Program in Health Sciences and Technology: Transposable Elements and the Regulatroy Logic of Hematopoietic Differentiation

### Sooraj Narayan

(February, 2023) Thesis in the field of Mechanical Engineering: Electro-Chemo-Mechanics of Solids: Application to All-Solid-State Batteries, Polyelectrolyte Gels, and Actuators.

#### Jennifer Kaczmarek Nash

(February, 2023) Thesis in the field of Chemical Engineering: Biosensor Application To Directed Enzyme Evolution for Improved Glucaric Acid Production

#### Maya Nasr

Thesis in the field of Aeronautics and Astronautics: Innovation Challenges in NASA's Planetary Program and a Policy Framework for Sustainable and Equitable Space Resource Utilization

#### Tatiana Sofia Netterfield

Thesis in the field of Biological Engineering: Combined Computational and Experimental Analysis of the Senescence-Proliferation Cell Decision After DNA Damage

### Bertrand J. Neyhouse

Thesis in the field of Chemical Engineering: Rational Design Strategies for Redox Flow Batteries

### Jerry Ng

Thesis in the field of Mechanical Engineering: Applications of the Koopman Operator: Novel Methods and Formulations for Lifted Linear Models

### Quynh Phuong Ngo

Thesis in the field of Materials Science and Engineering: The Use of Nanomaterials in Emulsions and Their Assembly at the Liquid-Liquid Interface

#### Tam Ngoc Thanh Nguyen

(February, 2023) Thesis in the field of Chemical Engineering: Systems Engineering for Viral Vector Manufacturing

### Johannes Josef Norheim

(September, 2022)

Thesis in the field of Engineering Systems submitted to the Department of Aeronautics and Astronautics: Mathematical Formulations in Conceptual Design, Analysis, and Optimization

### Xuefei Angelina Nou

Thesis in the field of Biological Engineering: Engineered Bacteria to Sense and Record Environmental DNA

### Alexander David O'Brien

Thesis in the field of Nuclear Science and Engineering: Development of Materials for Extreme Environment Applications by Laser Powder Bed Fusion

### Moses Teddy Ort

(September, 2022) Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Autonomous Navigation without HD Prior Maps

### **Crystal Elaine Owens**

Thesis in the field of Mechanical Engineering: Extrusion Printing of Carbon Nanotube Inks, from Rheology to Electronics

### Sidhant J. Pai

(September, 2022) Thesis in the field of Atmospheric Chemistry and Composition Modeling submitted to the Department of Civil and Environmental Engineering: Investigating Secondary Atmospheric Aerosols Using Chemically-Speciated Observations and Targeted Model Development

### Joseph Robert Palmeri

Thesis in the field of Chemical Engineering: Collagen Anchoring Agonist Antibodies for Cancer Immunotherapy

### Sreedath Panat

(February, 2023) Thesis in the field of Mechanical Engineering: Charged Interfaces and Their Applications in Energy Sustainability

### Tao Pang

(February, 2023) Thesis in the field of Mechanical Engineering: Planning, Sensing, and Control for Contact-Rich Robotic Manipulation with Quasi-Static Contact Models

### Jay Biren Patel

Thesis in the field of Medical Engineering and Medical Physics submitted to the Harvard-MIT Program in Health Sciences and Technology: Improving Segmentation Pipelines for Medical Imaging Using Deep Learning

### Jatin Jayesh Patil

Thesis in the field of Materials Science and Engineering: Rapidly-Deployable Materials Processing Approaches for Energy Applications and Chemical Separations

### Lagnajit Pattanaik

(February, 2023) Thesis in the field of Chemical Engineering: Towards Automated Reaction Kinetics with Message Passing Neural Networks

### **Colin Armstrong Pavan**

Thesis in the field of Aeronautics and Astronautics: Nanosecond Pulsed Plasmas in Dynamic Combustion Environments

### Allen Mark Payne

(February, 2023) Thesis in the field of Chemical Engineering: Generating Detailed Kinetic Models for Large Pyrolysis Systems

#### **Shourav Suhas Pednekar**

Thesis in the field of Mechanical Engineering: High-Resolution Spatio-Temporal Quantification of Fish Predator-Prey Interactions over Ecosystem Scales with Multispectral Underwater Sensing and Optimality of Human Visual Perception with Natural Daylight

### Alfonso Alexander Perez

Thesis in the field of Mechanical Engineering: Design of Lightweight Prefabricated Home Foundation Manufactured via Industrial Large-Scale Polymer Additive Manufacturing

### Joshua Mark Peters

(September, 2022) Thesis in the field of Biological Engineering: Mapping and Modeling Macrophages in Tuberculosis

### **Eveline Postelnicu**

(September, 2022) Thesis in the field of Materials Science and Engineering: Low Temperature Heterogeneous Integration of Germanium on Silicon

### **Eric Ryan Powers**

(February, 2023) Thesis in the field of Chemical Engineering: Ultrafast Investigations of Exciton Dynamics in 0D and 2D Hybrid Semiconductor Nanomaterials

### Mihika Prabhu

(February, 2023) Thesis in the field of Electrical Engineering and Computer Science: Large-Scale Programmable Silicon Photonics for Quantum and Classical Machine Learning

#### **Prakash Prashanth**

(February, 2023) Thesis in the field of Aerospace, Energy, and the Environment submitted to the Department of Aeronautics and Astronautics: Environmental Impacts of Aviation Propulsion Systems

#### Francesc Xavier Puig Fernandez

(February, 2023) Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: VirtualHome: Building Socially Intelligent Agents via Simulation

#### Yujie Qian

Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: From Structured Document To Structured Knowledge

### Jack Yanjie Qiu

(February, 2023) Thesis in the field of Electrical Engineering and Computer Science: The Generation and Detection of Squeezed Microwave Photons Realized Using Traveling-Wave Parametric Amplifiers

#### Victor Thanh-Tam Quach

Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Language Modeling with Guarantees

#### Adityanarayanan Radhakrishnan

Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Foundations of Machine Learning: Over-Parameterization and Feature Learning

#### Ameya Rao

(February, 2023) Thesis in the field of Chemical Engineering: Structure and Dynamics of Associative Polymer Gels

### Mitchell Burrows Robinson

(September, 2022) Thesis in the field of Medical Engineering and Medical Physics submitted to the Harvard-MIT Program in Health Sciences and Technology: Interferometric, Acousto-Optic Modulated Diffuse Correlation Spectroscopy @ 1064 nm (AOM-iDCS) Toward Higher Sensitivity, Non-Invasive Measurement of Cerebral Blood Flow

#### Kristen Alexandra Rodrigues

Thesis in the field of Medical Engineering and Medical Physics submitted to the Harvard-MIT Program in Health Sciences and Technology: An Alum Particle-Based Platform to Enhance and Investigate Humoral Immune Responses to Immunization

### Sergio Andre Rodríguez Aponte

Thesis in the field of Biological Engineering: Streamlining Development of Biologics with K. phaffii, a Yeast Host Platform

### **Emily Rogers-Bradley**

(February, 2023) Thesis in the field of Mechanical Engineering: Design and Evaluation of a Quasi-Passive Variable Stiffness Ankle-Foot Prosthesis to Improve Biomechanics Across Walking Speeds

#### Zhumei Rohskopf

Thesis in the field of Mechanical Engineering: Continuous Antibody Titer Assessment of the Biomanufacturing Process Using Nanofluidic Binding Assays

### Antoni Rosiñol Vidal

(February, 2023) Thesis in the field of Aeronautics and Astronautics: 3D Spatial Perception: With Real-Time Dense Metric-Semantic SLAM

### John Wesley Ryter

Thesis in the field of Materials Science and Engineering: Mine to Table: Technology and Policy Strategies for Sustainable Mineral Supply Chains in the Low-Carbon Energy Transition

#### Seungchan Ryu

(February, 2023) Thesis in the field of Mechanical Engineering: Protonic All-Solid-State Electrochemical Device as an Artificial Synapse for CMOS-Compatible Neuromorphic Computing

#### Feras Ahmad Saad

(September, 2022) Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Scalable Structure Learning, Inference, and Analysis with Probabilistic Programs

#### Taqiyyah Sariyah Safi

(September, 2022) Thesis in the field of Electrical Engineering submitted to the Department of Electrical Engineering and Computer Science: Tailoring Charge to Spin Conversion in Novel Materials for Efficient Spintronics

#### Sachit Dinesh Saksena

(September, 2022) Thesis in the field of Computational and Systems Biology: Machine Guided Biological Discovery and Design

#### **Gabriel Orr Samach**

(February, 2023) Thesis in the field of Electrical Engineering and Computer Science: Tangled Circuits: Characterizing Errors in Experimental Superconducting Quantum Processors

#### Lindsay M. Sanneman

Thesis in the field of Autonomous Systems submitted to the Department of Aeronautics and Astronautics: Transparent Value Alignment: Foundations for Human-Centered Explainable AI in Alignment

### Mayuran Saravanapavanantham

Thesis in the field of Electrical Engineering and Computer Science: Additive Manufacturing Towards Electronically-Active Surfaces

### **Cassandra Schaening Burgos**

(September, 2022) Thesis in the field of Computational and Systems Biology: Transcriptome-Wide Pseudouridine Profiling Reveals Modification of Critical E. coli mRNAs

#### **Kushal Seetharam**

(September, 2022) Thesis in the field of Electrical Engineering submitted to the Department of Electrical Engineering and Computer Science: Quantum Simulation of Many-Body Systems

### Joao Seixas De Medeiros

(February, 2023)

Thesis in the field of Ocean Engineering submitted to the Department of Mechanical Engineering: Analytical and Numerical Studies of the Generation and Propagation of Nonlinear Water Waves by a Wavemaker

#### Yanjie Shao

Thesis in the field of Electrical Engineering submitted to the Department of Electrical Engineering and Computer Science: Ultra-Scaled III-V Vertical Tunneling Transistors

#### Allison Mae Sheen

Thesis in the field of Biological Engineering: Engineering Tumor-Localized Therapies for Cancer - From Antioxidant Enzymes to Cytokines and Radiation Therapy

#### Sara Ann Sheffels

Thesis in the field of Materials Science and Engineering: Proton Dynamics in Ultrathin Gadolinium Oxide Magneto-Ionic Devices

#### Jiasi Shen

(September, 2022) Thesis in the field of Computer Science and Engineering submitted to the Department of Electrical Engineering and Computer Science: Program Inference and Regeneration via Active Learning

### Maxwell Aaron Sherman

(February, 2023)

Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: From Genetics to Disease: Algorithms to Decode Somatic Mutations

#### Jessica Shi

Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Bridging Theory and Practice in Parallel Clustering

#### **James Siderius**

(February, 2023) Thesis in the field of Electrical Engineering and Computer Science: Understanding Social Media: Misinformation, Attention, and Digital Advertising

### **Raspberry Antonia Simpson**

(September, 2022)

Thesis in the field of Nuclear Science and Engineering: Investigation of Laser-Driven Particle Acceleration for the Development of Tunable Ion Sources for Applications in High Energy Density Science

#### Adam Andrzej Śliwiak

Thesis in the field of Computational Science and Engineering: Leveraging the Linear Response Theory in Sensitivity Analysis of Chaotic Dynamical Systems and Turbulent Flows

#### Alexander J. Sludds

Thesis in the field of Electrical Engineering and Computer Science: Delocalized Photonic Deep Learning on the Internet's Edge

#### Sydney Leigh Solomon

(February, 2023) Thesis in the field of Biological Engineering: Development of Tools to Quantitatively Probe Mycobacterium Tuberculosis-Induced Host Phagosomal and Signaling Responses

#### Chen Song

Thesis in the field of Chemical Engineering: Fabrication of Electrospun Anti-Fouling Membranes for Emulsified Oil-in-Water Separation

#### Hyuk Joon Song

Thesis in the field of Polymers and Soft Matter submitted to the Department of Materials Science and Engineering: Mechanics of Composite Hydrogels

### Hyun Geun Song

Thesis in the field of Medical Engineering and Medical Physics submitted to the Harvard-MIT Program in Health Sciences and Technology: Design and Control of Mechanoneural Interfaces for Neuroprosthetic Limbs

#### Shashank Srikant

Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Computational and Cognitive Models of Understanding Computer Programs

#### Caspar R. Stinn

Thesis in the field of Materials Science and Engineering: Pyrometallurgical Oxide-Sulfide Anion Exchange for Improved Material Separation and Metal Production

#### Michael Austin Stolberg

Thesis in the field of Polymers and Soft Matter submitted to the Department of Materials Science and Engineering: Polymer Electrolyte Discovery via Rational Design and High Throughput Methods

#### Hui Sun

(February, 2023) Thesis in the field of Structures and Materials submitted to the Department of Civil and Environmental Engineering: Template-Directed Assembly of Silk in Advanced Materials for Food Security

#### Harini Sonia Suresh

(February, 2023) Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Context-Grounded Machine Learning

#### Daniel Hiroshi Suzuki

Thesis in the field of Materials Science and Engineering: Dzyaloshinskii-Moriya Interaction and Local Exchange Variation in Rare-Earth Transition-Metal Ferrimagnets

### Bazyli Mikołaj Szymański

(February, 2023) Thesis in the field of Air Transportation Systems submitted to the Department

of Aeronautics and Astronautics: Continuous Pricing Algorithms for Airline RM: Theoretical Properties and Competitive Implications

### Anthony Tabet

(February, 2023) Thesis in the field of Chemical Engineering: Recording and Reprogramming Neuroimmunity in Cancer

#### **Orion Thomas Taylor**

Thesis in the field of Mechanical Engineering: Manipulation of Unknown Objects via Contact Configuration Regulation

#### Kevin Michael Tenny

(See also M.B.A., Course XV) Thesis in the field of Chemical Engineering Practice submitted to the Department of Chemical Engineering: Combining Computation and Experimentation for Accelerated Understanding of Electrode Microstructure in Redox Flow Batteries

# **Sri Gowtham Thakku Venkateswaran** (September, 2022)

Thesis in the field of Medical Engineering and Medical Physics submitted to the Harvard-MIT Program in Health Sciences and Technology: Modular CRISPR-Diagnostics for Infectious Diseases

### Huanhuan Tian

(February, 2023) Thesis in the field of Chemical Engineering: Nonlinear Ion Transport at High Electric Currents in Shock Electrodialysis and Ion-Intercalation Memories

### Yonglong Tian

(February, 2023) Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Towards General-Purpose Vision via Multiview Contrastive Learning

### Jesús Tordesillas Torres

(September, 2022)

Thesis in the field of Controls submitted to the Department of Aeronautics and Astronautics: Trajectory Planning for Flights in Multiagent and Dynamic Environments

### **Tyler Daniel Toth**

(September, 2022) Thesis in the field of Biological Engineering: Engineering Plant-Microbe Communication

#### **Amelia Jo Trainer**

Thesis in the field of Nuclear Science and Engineering: Hydrogen Distribution in Metal Hydrides and its Effect on Reactor Physics Calculations

### **Geoffrey Vaartstra**

Thesis in the field of Mechanical Engineering: Kinetics of Heat and Mass Transfer Near the Liquid-Vapor Interface

#### Kapil Eknath Vaidya

(February, 2023) Thesis in the field of Computer Science and Engineering submitted to the Department of Electrical Engineering and Computer Science: Instance-Optimized Data Structures for Membership Queries

# **Jessica Raquelle Van Brummelen** (September, 2022)

Thesis in the field of Electrical Engineering and Computer Science: Empowering K-12 Students to Understand and Design Conversational Agents: Concepts, Recommendations, and Development Platforms

#### **Connor Anthony Verheyen**

Thesis in the field of Medical Engineering and Medical Physics submitted to the Harvard-MIT Program in Health Sciences and Technology: Data-Driven Approaches for Complex Systems: Leveraging Machine Learning, Materials Science, and Manufacturing for New Biomedical Technologies

#### Laurens Jozef Amandine Voet

(February, 2023) Thesis in the field of Aeronautics and Astronautics: A Quantitative Assessment of Advanced Take-Off Trajectories for Supersonic Transport Noise Reduction

### Nikhil Vyas

(February, 2023) Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Satisfiability Algorithms and Connections between Algorithms and Circuit Lower Bounds

#### **Charles Tai-Chieh Wan**

(February, 2023) Thesis in the field of Chemical Engineering: Designer Porous Carbon Electrodes for Redox Flow Batteries

### Andrew J. Wang

(September, 2022) Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Risk-Bounded Dynamic Scheduling of Temporal Plans

#### **Guoqing Wang**

Thesis in the field of Quantum Science and Engineering submitted to the Department of Nuclear Science and Engineering: Quantum Sensing and Simulation with Solid-State Defects

### Kevin K. Wang

(February, 2023) Thesis in the field of Air Transportation Systems submitted to the Department of Aeronautics and Astronautics: Airline Dynamic Offer Creation Using a Markov Chain Choice Model

#### Li-Wen Wang

(February, 2023) Thesis in the field of Medical Engineering and Medical Physics submitted to the Harvard-MIT Program in Health Sciences and Technology: Macrophage-Hitchhiking Anisotropic Microparticles for Therapeutic and Diagnostic Applications

### Shaoxiong Wang

(September, 2022) Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Interactive Touch for Manipulation

#### Wujie Wang

(September, 2022) Thesis in the field of Materials Science and Engineering: Differentiable Multiscale Molecular Simulations

### Yiqiu Wang

Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Fast Parallel Algorithms and Library for Spatial Clustering and Computational Geometry

#### Zhiyi Wang

(September, 2022) Thesis in the field of Aeronautics and Astronautics: Computational Modeling of Elastic and Transformation Incompatibility at Grain Boundaries in Shape Memory Materials

#### Ella Louise Wassweiler

(February, 2023) Thesis in the field of Electrical Engineering and Computer Science: Vapor Transport Deposition for Perovskite Solar Cells

#### **Thejas Satish Wesley**

Thesis in the field of Chemical Engineering: The Electrochemical Nature of Non-Faradaic Catalysis at Interfaces

#### **Charles Michael Wheeler**

Thesis in the field of Mechanical Engineering: Inertial Hysteresis Couplings

#### **Robert Michael Wilson**

(September, 2022) Thesis in the field of Biological Engineering: High Throughput Screening for Small Molecule Interactions with Nucleic Acid Binding Proteins

#### Ralph Wiser

(February, 2023) Thesis in the field of Nuclear Science and Engineering: A First Complete Approach to Address Model Error in Computational Turbulent Heat Transfer

#### Alexander Po-Yen Wu

Thesis in the field of Computational and Systems Biology: Towards Causality in Gene Regulatory Network Inference

### Chloe Michelle Wu

Thesis in the field of Biological Engineering: Examining How Mucins and Their Associated O-Glycans Shape Oral Microbial Communities

#### Yannan Wu

Thesis in the field of Electrical Engineering and Computer Science: Systematic Modeling and Design of Sparse Deep Neural Network Accelerators

### Spencer Thomas Wyant

(February, 2023) Thesis in the field of Materials Science and Engineering: Modeling Interfacial Thermal Transport with Molecular Dynamics: The Challenge of Making Accurate Comparisons to Experiment

#### Yu Xia

(September, 2022) Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Towards a Cryptographically Verifiable Database Management System

#### Kai Yuanqing Xiao

(September, 2022) Thesis in the field of Electrical Engineering and Computer Science: Probing, Improving, and Verifying Machine Learning Model Robustness

### Haowei Xu

(February, 2023) Thesis in the field of Quantum Science and Engineering submitted to the Department of Nuclear Science and Engineering: Optical Control over Nuclear Spins

#### Jie Xu

(September, 2022) Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Towards Computational Design of Shape and Control for Rigid Robots

### Junshen Xu

Thesis in the field of Electrical Engineering and Computer Science: A Robust and Efficient Framework for Sliceto-Volume Reconstruction: Application to Fetal MRI

#### Lei Xu

(February, 2023) Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Towards Deployable Robust Text Classifiers

### Qian Xu

(February, 2023) Thesis in the field of Mechanical Engineering: Thermoelectric Energy Conversion: First-Principles Simulations, Energy Harvesting, and Deep Cooling Systems

#### Mantian Xue

(February, 2023) Thesis in the field of Electrical Engineering submitted to the Department of Electrical Engineering and Computer Science: Graphene-Based Biochemical Sensing Array: Materials, System Designs and Data Processing

#### Adam Uri Yaari

(February, 2023) Thesis in the field of Electrical Engineering and Computer Science: Untangling the Complexity of Nature: Machine-Learning for Accelerated Life-Sciences

### Heng Yang

(September, 2022) Thesis in the field of Mechanical Engineering: Certifiable Outlier-Robust Geometric Perception

### Jingfan Yang

(February, 2023) Thesis in the field of Chemical Engineering: Experiments and Simulations of Autonomous Microscale Robotics

### Karren Dai Yang

(September, 2022) Thesis in the field of Biological Engineering: Machine Learning Approaches for Data Integration and Translation in Single-Cell Biology

### Yichen Yang

Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Player Capability and Locally Sub-Optimal Behavior in Strategic Games

#### Wenjie Yao

(September, 2022) Thesis in the field of Electrical Engineering and Computer Science: Inverse Design of Random Emitters in Nanophotonics

### Chia-Chen Yu

(February, 2023) Thesis in the field of Electrical Engineering and Computer Science: Conformable Ultrasound Face Patch for Cavitation-Enhanced Transdermal Cosmeceutical Delivery

#### Suhyoun Yu

(September, 2022) Thesis in the field of Mechanical Engineering: Study of Human Behavioral Models for Engineering Applications

#### **Tiancheng Yu**

Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Near-Optimal Learning in Sequential Games

#### **Chenyang Yuan**

(September, 2022) Thesis in the field of Electrical Engineering and Computer Science: Polynomial Structure in Semidefinite Relaxations and Non-Convex Formulations

### Mengyang Yuan

(September, 2022) Thesis in the field of Electrical Engineering submitted to the Department of Electrical Engineering and Computer Science: GaN Electronics for High Temperature Applications

#### Joy Shuang Zeng

Thesis in the field of Chemical Engineering: Traversing Catalytic Contexts for Interrogation and Design of Carbon Conversion Electrocatalysts

#### Ge Zhang

(February, 2023) Thesis in the field of Chemical Engineering: Power Sources for Sensors and Robots in Remote and Inaccessible Environments

#### Guo Zhang

(September, 2022) Thesis in the field of Electrical Engineering and Computer Science: Passive Health Monitoring with Radio Waves - In Body and In Home

### Haoquan Zhang

(September, 2022) Thesis in the field of Electrical Engineering and Computer Science: Techniques for Efficient Wide-Range Radio-Frequency Power Generation System

#### Lenan Zhang

(September, 2022) Thesis in the field of Mechanical Engineering: Understanding Heat Transport at Interfaces for Thermal Management of Electronics

#### Paul Zhang

Thesis in the field of Electrical Engineering and Computer Science: Surpassing Local Optimality in Geometry Processing

### Pengxiang Zhang

(February, 2023) Thesis in the field of Electrical Engineering and Computer Science: Current-Induced Dynamics of Easy-Plane Antiferromagnets

### Qihang Zhang

(February, 2023) Thesis in the field of Electrical Engineering and Computer Science: Learning-Based Correlation Analysis Between Laser Speckle and Surface Size Distribution

#### Qing Zhang

(September, 2022) Thesis in the field of Mechanical Engineering: Instabilities and Flow-Induced Structures in Anisotropic Systems

### Qiong Zhang

(February, 2023) Thesis in the field of Mechanical Engineering and Computation submitted to the Department of Mechanical Engineering: Model Development Based on Discrete Particle Simulations of Partially-and Fully-Saturated Granular Media

#### Shun Zhang

(September, 2022) Thesis in the field of Computational Science and Engineering: Three-Dimensional Integral Boundary Layer Method for Viscous Aerodynamic Analysis

### Yirui Zhang

(February, 2023) Thesis in the field of Mechanical Engineering: Revealing Interfacial Reactions and Charge Transfer Kinetics in Electrochemical Energy Storage and Conversion

#### Zhengxing Zhang

Thesis in the field of Electrical Engineering and Computer Science: Adjoint Methods and Inverse Modeling for Process Variation Analysis in Silicon Photonics

### **Zhoutong Zhang**

(September, 2022) Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Pursuing Mid-Level Perception from Casual Videos

#### Yajing Zhao

(September, 2022) Thesis in the field of Mechanical Engineering: Scalable Micro/ Nanostructured Surfaces for Thin-Film Condensation Heat Transfer Enhancement in Steam Power Plants

#### Muni Zhou

(September, 2022) Thesis in the field of Applied Plasma Physics submitted to the Department of Nuclear Science and Engineering: Genesis, Dynamics, and Dissipation of Turbulent Magnetic Fields

#### Yilun Zhou

(February, 2023) Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Techniques for Interpretability and Transparency of Black-Box Models

#### Hejian Zhu

Thesis in the field of Geotechnical and Geoenvironmental Engineering submitted to the Department of Civil and Environmental Engineering: Multiscale Modelling of the Mechanical Behavior of Clay

#### Yuntong Zhu

Thesis in the field of Materials Science and Engineering: High Entropy Amorphous and Crystalline Li-Garnet Films for Lithionic Applications **Tomer Zohar** (September, 2022) Thesis in the field of Biological Engineering: Methods, Models, and Machine Learning Approaches for Understanding Pathogen-Specific Humoral Immunity

# SCHOOL OF HUMANITIES, ARTS, AND SOCIAL SCIENCES, DOCTORAL

### **Doctor of Philosophy**

School of Humanities, Arts, and Social Sciences

### **Daniel Joseph Aronoff**

(September, 2022) Thesis in the field of Economics: Essays on Incentive Designs to Improve Market Performance

#### Allison Kaitlin Balin

(September, 2022) Thesis in the field of Philosophy submitted to the Department of Linguistics and Philosophy: A Defense of Impermissivism

#### **Christopher James Baron**

(September, 2022) Thesis in the field of Linguistics submitted to the Department of Linguistics and Philosophy: The Logic of Subtractives or, Barely Anyone Tried Almost as Hard as Me

#### Paige Holbrook Bollen

Thesis in the field of Political Science: Context, Contact, and Intergroup Relations in Sub-Saharan Africa

### Tatiana Igorevna Bondarenko

(September, 2022) Thesis in the field of Linguistics submitted to the Department of Linguistics and Philosophy: Anatomy of an Attitude

### Oguzhan Celebi

Thesis in the field of Economics: Essays in Economic Theory

#### Yong Chen

(September, 2022) Thesis in the field of Linguistics submitted to the Department of Linguistics and Philosophy: Asymmetries in Presupposition Projection: Processing and Acquisition

### Yizhuang Alden Cheng

Thesis in the field of Economics: Essays in Health Economics and Applied Econometrics Jonathan Palm Cohen

Thesis in the field of Economics: Essays on Unemployment

### Joel Peter Flynn

Thesis in the field of Economics: Essays in Behavioral Macroeconomics and Mechanism Design

### Ying Gao

(September, 2022) Thesis in the field of Political Science: Essays on the Political Behavior of Economic Informality and Public Goods

### Lyndal Jennifer Grant

(February, 2023) Thesis in the field of Philosophy submitted to the Department of Linguistics and Philosophy: Wanting to Do What's Right

### Adam Harris

Thesis in the field of Economics: Essays in Industrial Organization

### Lauren Kapsalakis

(September, 2022) Thesis in the field of History, Anthropology, and Science, Technology, and Society submitted to the Program in Science, Technology, and Society: The Loss of Integration Vs. Unity in Diversity: American Anthropology in the 1970s and 1980s and the Founding of the Society for Cultural Anthropology

### **Rijul Kochhar**

(September, 2022) Thesis in the field of History, Anthropology, and Science, Technology, and Society submitted to the Program in Science, Technology, and Society: Antibiotic Resistance, Planetary Crisis, and Bacteriophage Futures in the 21st Century

### Giacomo Lanzani

Thesis in the field of Economics: Essays in Economic Theory

### Crystal Lee

(September, 2022) Thesis in the field of History, Anthropology, and Science, Technology, and Society submitted to the Program in Science, Technology, and Society: Sensory Encounters in the Age of Computation

#### Andre Medeiros Sztutman

Thesis in the field of Economics: Essays on Public Finance and Information Economics

#### Aidan James Milliff

(September, 2022) Thesis in the field of Political Science: Seeking Safety: The Cognitive Foundations of Civilian Behavior during Violence

# Gabriel Charlie John Magnus Nahmias

(September, 2022) Thesis in the field of Political Science: Soft Skills and Hard Work: The Role of Relational Labor in the Supply of Political Organizing

#### Thi Mai Anh Nguyen

Thesis in the field of Economics: Essays on Long-Term Relationships and Networks

#### Lukas Wolters Osman Freiheyt

(September, 2022) Thesis in the field of Political Science: Essays on the Political Economy of Inequality, Wealth, and Money

### Abigail Jean Hoenig Ostriker

Thesis in the field of Economics: Essays on the Economics of Environmental and Health Risk

### Indira Puri

(See also S.M., Course XIV) Thesis in the field of Economics: Simplicity and Choice

### Ryan Ravanpak

(September, 2022) Thesis in the field of Philosophy submitted to the Department of Linguistics and Philosophy: Biological Life and the Partiality Relation

### **Blair Michelle Read**

(September, 2022) Thesis in the field of Political Science: When Voice Leads to Exit: \\ Democracy, Development, and Private Provision

### Haley Schilling

(September, 2022) Thesis in the field of Philosophy submitted to the Department of Linguistics and Philosophy: Practical Epistemology: Essays on What to Think and What to Do

#### Garima Sharma

Thesis in the field of Economics: Essays in Development and Labor Economics

#### Joseph N. Shayani

(September, 2022) Thesis in the field of Economics: Essays on Interviews and Matching

### **Emilia Simison**

(September, 2022) Thesis in the field of Political Science: Resetting Public Policy? Democracies, Dictatorships, and Policy Change

#### **Rahul Singh**

Thesis in the field of Economics and Statistics: Essays on Econometrics, Causal Inference, and Machine Learning

#### Elena Sobrino

Thesis in the field of History, Anthropology, and Science, Technology, and Society submitted to the Program in Science, Technology, and Society: Living with Crisis: Family, Labor, and Environment in Flint, Michigan

### **Michelle Spektor**

(February, 2023) Thesis in the field of History, Anthropology, and Science, Technology, and Society submitted to the Program in Science, Technology, and Society: From Documents to Data: The Emergence of National Biometric Identification Systems in the 20th and 21st Centuries

#### Frank Joseph Staniszewski

(September, 2022) Thesis in the field of Linguistics submitted to the Department of Linguistics and Philosophy: Modality and Time in Logical Context

### John Anton Sturm

Thesis in the field of Economics: Essays on Economic Policy Design

### Meicen Sun

(September, 2022) Thesis in the field of Political Science: The Double-Edged Effect of Information Control and How It Consolidates Autocratic Rule in the Digital Age

#### Diana Sverdlin Lisker

Thesis in the field of Economics: Essays on Development Economics

### John Tylko

(February, 2023) Thesis in the field of History, Anthropology, and Science, Technology, and Society submitted to the Program in Science, Technology, and Society: Simulating Apollo: Flight Simulation Technology 1945-1975

#### Martina Uccioli

Thesis in the field of Economics: Essays in Labor Economics

#### Suhas Vijaykumar

Thesis in the field of Economics and Statistics: Statistical Learning and Uncertainty Quantification

### Mallory Webber

(September, 2022) Thesis in the field of Philosophy submitted to the Department of Linguistics and Philosophy: Moderate Modal Metaphysics

#### Danfeng Wu

(September, 2022) Thesis in the field of Linguistics submitted to the Department of Linguistics and Philosophy: Syntax and Prosody of Coordination

#### Xinhe Wu

(September, 2022) Thesis in the field of Philosophy submitted to the Department of Linguistics and Philosophy: Boolean-Valued Models and Their Applications

#### Margaret Bess Yellen

Thesis in the field of Economics: Essays in Industrial Organization and Labor Economics

# SLOAN SCHOOL OF MANAGEMENT, DOCTORAL

### Doctor of Philosophy

Sloan School of Management

### Jackie Wonjae Baek

(September, 2022) Thesis in the field of Operations Research: Decision-Making Under Uncertainty: From Theory to Practice

### Léonard David Jean Boussioux

Thesis in the field of Operations Research: Multimodality: Models, Algorithms, and Applications

#### Yiqun Cao

(September, 2022) Thesis in the field of Management: Understanding Video Ads on Social Media Platforms

#### Wenyu Chen

Thesis in the field of Operations Research: Optimization Methods for Machine Learning under Structural Constraints

### **Allison Taylor Cole**

Thesis in the field of Management: Essays in Financial Economics

#### Vasileios Digalakis

Thesis in the field of Operations Research: Analytics under Variability, Volume, and Velocity with Applications to Sustainability and Healthcare

### Patricio Tomas Foncea Araneda

(September, 2022) Thesis in the field of Operations Research: Learning and Optimization in Modern Retail

### Emma Lauren Gibson

(September, 2022) Thesis in the field of Operations Research: Optimizing Healthcare Delivery in Resource-Limited Settings

#### Samuel Paul Gilmour

Thesis in the field of Operations Research: Allocating Scarce Resources: Modeling and Optimization Xiaoyue Gong

Thesis in the field of Operations Research: Data-Driven Decision Making in Operations Management

### Wesley Hatch Greenblatt

Thesis in the field of Management: Essays on Biomedical Innovation

### Marat Ibragimov

Thesis in the field of Management: Product Returns Management in Online Retail

### Jonathan E. Jensen

Thesis in the field of Management: Essays in Municipal Finance

#### Maziar Mahdavi Kazemi (September, 2022)

(September, 2022) Thesis in the field of Management: Three Essays in Financial Economics

# Soomi Kim

Thesis in the field of Management: Essays on the Production of Ideas

# Alexander Marion Kowalski

(September, 2022) Thesis in the field of Management: Terrible Timing: The Causes and Consequences of Problematic Work Schedules

### Jason Cheuk Nam Liang

Thesis in the field of Operations Research: Automated Data-driven Algorithm and Mechanism Design in Online Advertising Markets

### **Emily Meigs**

(September, 2022) Thesis in the field of Operations Research: Information and Incentives in Online Platforms

### Liangyuan Na

Thesis in the field of Operations Research: Optimal Decision Making for Healthcare Operations: Models and Implementation

### James Edward Paine

Thesis in the field of Management: Essays on Dynamic Supply Chains and Service Delivery Systems

### **Ioannis Spantidakis**

(September, 2022) Thesis in the field of Operations Research: Constrained Inventory Optimization on Complex Warehouse Networks

### Fransisca Susan

Thesis in the field of Operations Research: Combinatorial Learning for Online Marketplaces

#### Hagay Constantin Volvovsky

Thesis in the field of Management: Collaborating at the Tower of Babel: The Meaning of Cooperation and the Foundations of Long-Term Exchange

### Joshua Todd Wilde

(February, 2023) Thesis in the field of Operations Research: Analytics-Enabled Quality and Safety Management Methods for High-Stakes Manufacturing Applications

#### **Rachel Seou Yoon**

Thesis in the field of Management: Do Mandated Risk Disclosures Affect Corporate Risk-Taking?

### Jiaheng Yu

Thesis in the field of Management: Essays on Corporate Finance and Financial Markets

### Yunhao Zhang

Thesis in the field of Management: Essays on Mechanisms Underlying Belief Updating with Applications in Wisdom of Crowds

### Renbo Zhao

Thesis in the field of Operations Research: New Theory and Algorithms for Convex Optimization with Non-Standard Structures

### Andrew Terence Zheng

Thesis in the field of Operations Research: Experimentation and Control in Online Platforms

# SCHOOL OF SCIENCE, DOCTORAL

### **Doctor of Philosophy**

School of Science

### Sameer Abraham

(September, 2022) Thesis in the field of Physics: Patterns and Processes Driving Chromosome Organization

### Nile S. Abularrage

(February, 2023) Thesis in the field of Chemistry submitted to the Department of Chemistry: Bioorthogonal Reagents: Design, Synthesis, and Reactivity

### Saleh M. Al Nasser

(February, 2023) Thesis in the field of Geophysics submitted to the Department of Earth, Atmospheric, and Planetary Sciences: Non-Uniqueness in Fluid-Flow Modeling

### Samuel Jonathan Allon

(September, 2022) Thesis in the field of Chemistry submitted to the Department of Chemistry: Consequences and Limits of Cell-Cell Communication in Airway Immune Responses

#### Moses Jeremy Amdur

(September, 2022) Thesis in the field of Chemistry submitted to the Department of Chemistry: Chemical Control of the Spin-Phonon Interaction to Develop a New Generation of Molecular Quantum Bits

#### Ranjan Anantharaman

(February, 2023) Thesis in the field of Mathematics: Approximation of Large Stiff Acausal Models

#### Alyssa Joan Anderson

Thesis in the field of Biochemistry submitted to the Department of Biology: Insights into the Substrate Specificities, Interactions and Regulatory Mechanisms of Bacterial Glycoconjugate Biosynthesis Enzymes

#### Yan Sheng Ang

Thesis in the field of Mathematics: Dynamical Statistics for Power Series and Polynomials with Restricted Coefficients

#### Eric Ricardo Anschuetz

Thesis in the field of Physics: The Trainability and Expressivity of Quantum Machine Learning Models

### Juncal Arbelaiz Mugica

(September, 2022) Thesis in the field of Mathematics: Optimal Distributed Control and Estimation for Systems with Spatiotemporal Dynamics

### Constantin Wicaksono Arnscheidt

Thesis in the field of Earth Atmospheric, and Planetary Sciences submitted to the Department of Earth Atmospheric, and Planetary Sciences: Four Problems in Nonlinear Earth System Dynamics

#### Jenna Lauren Aronson

Thesis in the field of Neuroscience submitted to the Department of Brain and Cognitive Sciences: Developing Tools to Physically Magnify Biological Substrates for Clinical Applications

#### **Edward Daisuke Badding**

Thesis in the field of Chemistry submitted to the Department of Chemistry: Site-Selective Labeling of the Nitrogenase Iron-Molybdenum Cofactor

#### **Pierre Barral**

Thesis in the field of Physics: Elastic and Inelastic Dipolar Scattering

### Patrick Beaudry

(September, 2022) Thesis in the field of Geochemistry submitted to the Department of Earth, Atmospheric, and Planetary Sciences: Experimental, Geochemical, and Isotopic Insights on Melting and Degassing Behavior on Earth

### David Anthony Berardo

Thesis in the field of Physics: Exoplanetary Systems in Technicolor

### Aaron Joshua Berger

Thesis in the field of Mathematics: Applications of the Regularity Method in Combinatorics

#### Hannah Michelle Bernstein

Thesis in the field of Biochemistry submitted to the Department of Biology: Biochemical Characterization of Glycan Assembly Pathway Enzymes

#### Andrea Sylvia Biscoveanu

Thesis in the field of Physics: From Black Holes to the Big Bang: Astrophysics and Cosmology with Gravitational-Waves and Their Electromagnetic Counterparts

### Ekaterina Bolotskaya

(February, 2023) Thesis in the field of Geophysics submitted to the Department of Earth, Atmospheric, and Planetary Sciences: Effects of Fault Failure Parameterization and Bulk Rheology on Earthquake Rupture

### Sonia Anne Boor

(September, 2022) Thesis in the field of Biology: Genetic Analysis of Behavioral Plasticity in Response to Changing Food Environments in Caenorhabditis Elegans

#### Kaley Virginia Brauer

Thesis in the field of Physics: Formation History of the Milky Way and the Origins of Heavy Elements

#### Elizabeth Ann Brija

Thesis in the field of Neuroscience submitted to the Department of Brain and Cognitive Sciences: Alternative Splicing and RNA Editing of the Complexin C-terminus Regulates Neurotransmitter Release in *Drosophila* 

#### Alexandra Carol Brown

Thesis in the field of Chemistry submitted to the Department of Chemistry: Coordination Chemistry of Fe–S Clusters Supported by N-Heterocyclic Carbenes

### **Douglas Raymond Brown**

(September, 2022) Thesis in the field of Biology: MFSD7C is an ATP Transporter that Supports Bacterial Killing by Alveolar Macrophages in a Lipid-Rich Microenvironment

### Lindsey Orgren Calabretta

(September, 2022) Thesis in the field of Chemistry submitted to the Department of Chemistry: Guanidinium Compounds: Synthesis, Oxoanion Binding, and Cellular Delivery

#### Alex Joseph Callahan

Thesis in the field of Chemistry submitted to the Department of Chemistry: Automated Flow Synthesis of Biomacromolecules

#### Jaclyn Marie Camuglia

(September, 2022) Thesis in the field of Biology: Morphogenetic Forces Planar Polarize LGN/Pins in the Embryonic Head during Drosophila Gastrulation

### Michael Alan Cantara

(February, 2023) Thesis in the field of Physics: Dipolar Shielding and Sub-Wavelength Bilayers in a Quantum Gas of Dysprosium

#### Alex Wai Chan

Thesis in the field of Biology: Analysis of CDPK1 Targets Identifies a Trafficking Adaptor Complex That Regulates Microneme Exocytosis in Toxoplasma

#### **Tianyang Chen**

Thesis in the field of Chemistry submitted to the Department of Chemistry: Structure- and Composition-Performance Relationships of Electrically Conductive Metal-Organic Frameworks, Conjugated Porous Organic Polymers, and Fused Aromatics

#### Sinho Chewi

Thesis in the field of Mathematics and Statistics submitted to the Department of Mathematics: An Optimization Perspective on Log-Concave Sampling and Beyond

#### Junyi Chu

Thesis in the field of Cognitive Science submitted to the Department of Brain and Cognitive Sciences: Goals, Play, and Cognitive Pragmatism

### Steven Michael Colvin

(February, 2023) Thesis in the field of Biology: Models of Autism Spectrum Disorder: Fragile X Syndrome and Rett Syndrome

#### Valentin Didier Marie Claude Crépel (September, 2022)

Particle Mechanism for Unconventional Superconductivity, Theory and Potential Applications

### Karen Guadalupe Cruz

(February, 2023) Thesis in the field of Neuroscience submitted to the Department of Brain and Cognitive Sciences: Prefrontal-Collicular Interactions in Visually Guided Behavior

#### Madeline Cusimano

(September, 2022) Thesis in the field of Cognitive Science submitted to the Department of Brain and Cognitive Sciences: Listening with Generative Models

#### Léo Delage-Laurin

Thesis in the field of Chemistry submitted to the Department of Chemistry: Investigation of Electronic Molecular Materials with Magneto-Optical and Magnetic Properties

#### Alejandro Diaz

(February, 2023) Thesis in the field of Physics: Through Iron & Ice: Searching for Sterile Neutrinos at the IceCube Neutrino Observatory

#### **Diomedes Dieppa-Matos** (September, 2022)

Thesis in the field of Chemistry submitted to the Department of Chemistry: Reactive Peptides for Site-Selective Cysteine and Lysine Bioconjugation

#### Leon Ding

Thesis in the field of Physics: Novel Gates with Superconducting Fluxonium Qubits

#### Zhiyu Dong

Thesis in the field of Physics: Chiral Stoner Magnetism in Dirac Bands

#### Chenru Duan

(September, 2022) Thesis in the field of Chemistry submitted to the Department of Chemistry: Quantum Chemistry Meets Machine Learning: Autonomous Computational Workflow for Chemical Discovery

### Aarti Dwivedi

(September, 2022) Thesis in the field of Geophysics submitted to the Department of Earth, Atmospheric, and Planetary Sciences: Slow Slip Events in Cascadia

#### Zackery Ely

(February, 2023) Thesis in the field of Computational and Systems Biology submitted to the Department of Biology: A Broadened HLA Ligandome Uncovers New Immunotherapy Targets for Pancreatic Cancer and a Prime Editor Mouse to Model a Broad Spectrum of Somatic Mutations

#### Zahra Essack

Thesis in the field of Planetary Sciences submitted to the Department of Earth, Atmospheric, and Planetary Sciences: Detection and Characterization of Hot Super-Earth Exoplanets

#### Nathan Hikaru Faialaga

(February, 2023) Thesis in the field of Chemistry submitted to the Department of Chemistry: Tandem Benzannulation-Cyclization Strategies for the Synthesis of Highly Substituted Indoles

#### Jenelle Jo Feather

(February, 2023) Thesis in the field of Cognitive Science submitted to the Department of Brain and Cognitive Sciences: Evaluating Machine Learning Models of Sensory Systems

#### **Olivia Christine Fiebig**

(September, 2022) Thesis in the field of Chemistry submitted to the Department of Chemistry: Understanding Ultrafast Energy Transfer across the Photosynthetic Membrane of Purple Bacteria with Near-Native Systems

### Andrew Frederick Francl

(September, 2022) Thesis in the field of Cognitive Science submitted to the Department of Brain and Cognitive Sciences: Insights Into Ecological Sounds Localization via Machine Learning Based Models

#### John Randolph Frank

Thesis in the field of Physics: Ordering of Curving Interfaces

### Yuqiu Fu

Thesis in the field of Mathematics: Fourier Decoupling for Convex Sequences

#### Zhenghao Fu

(September, 2022) Thesis in the field of Physics, Statistics, and Data Science submitted to the Department of Physics: First Step into A New Physics Realm: Search for the Majorana Nature of Neutrinos in the Inverted Mass Ordering Region

#### Shengwen Gan

Thesis in the field of Mathematics: The Restricted Projection Problems

# Paritosh Gangaramani

(September, 2022) Thesis in the field of Biology: The Roles of the Mcm2-7 Tails in Replication Initiation

#### Francisco J. Garcia

Thesis in the field of Neuroscience submitted to the Department of Brain and Cognitive Sciences: Molecular Profiling and Mechanisms of Cerebrovascular Function in Health and Neurodegeneration

#### Jonathan Raymond Gauthier

Thesis in the field of Cognitive Science submitted to the Department of Brain and Cognitive Sciences: Multi-Level Modeling of Language Processing in the Mind and Brain

#### Raphaël Vincent Gayet

(September, 2022) Thesis in the field of Microbiology submitted to the Department of Biology: Developing Nucleic Acid-Based Sensors and Actuators

#### Natalie Clair Golota

Thesis in the field of Chemistry submitted to the Department of Chemistry: Advances in Sensitivity and Resolution of Solid State Nuclear Magnetic Resonance and Dynamic Nuclear Polarization

### **Christian Gomez**

Thesis in the field of Chemistry submitted to the Department of Chemistry: Studies Directed Toward the Synthesis of Streptonigrin

### Kevin Robert Gozzi

(September, 2022) Thesis in the field of Biology: Gene Transfer Agents Promote Survival and DNA Repair during Stationary Phase for *Caulobacter crescentus* 

### Anthony Valenti Grebe

(September, 2022) Thesis in the field of Physics: Probing the Frontiers of the Standard Model with Lattice QCD

### Simon Benedikt Grosse-Holz

Thesis in the field of Physics: Dynamics of Genome Organization

### Chantal Katrin Guegler

(February, 2023) Thesis in the field of Molecular Biology submitted to the Department of Biology: The Role of a Toxin-Antitoxin System in the Arms Race between Bacteria and Phage

#### Feng Gui

Thesis in the field of Mathematics: Liouville Properties and Dimensionality Bounds for Harmonic and Caloric Functions

### **Ellen Jane Guss**

Thesis in the field of Biology: The Heparan Sulfate Proteoglycan Perlecan Regulates Axonal and Synaptic Stability

### Minyong Han

(September, 2022) Thesis in the field of Physics: Engineering Topology and Correlation in Epitaxial Thin Film Kagome Metals

### Woonghee Han

(February, 2023) Thesis in the field of Physics, Statistics, and Data Science submitted to the Department of Physics: Studies of Edge Fluctuations of Negative Triangularity Plasma on TCV Using a New Gas Puff Imaging Diagnostic

#### Michael Trier Liu Happ

Thesis in the field of Computational Neuroscience submitted to the Department of Brain and Cognitive Sciences: Predictive Novelty Detection in Songbird Auditory Cortex

### Stephanie M. Hart

(September, 2022) Thesis in the field of Chemistry submitted to the Department of Chemistry: Exciton Dynamics in DNA-Chromophore Assemblies

### **Thomas Richard Hartke**

(September, 2022) Thesis in the field of Physics: Fermion Pairing and Correlations Under a Quantum Gas Microscope

#### Qilin He

(February, 2023) Thesis in the field of Chemistry submitted to the Department of Chemistry: Ring-Opening Metathesis Polymerization for the Creation of Responsive Colloids and Surfaces

#### **Matthias Hofer**

(February, 2023) Thesis in the field of Cognitive Science submitted to the Department of Brain and Cognitive Sciences: The Cultural Emergence of Combinatorial Structure

#### Sean Dae Houlihan

(September, 2022) Thesis in the field of Cognitive Science submitted to the Department of Brain and Cognitive Sciences: A Computational Framework for Emotion Understanding

#### William Crossan Howland III

Thesis in the field of Chemistry submitted to the Department of Chemistry: Diagnosing Band-Mediated Electrochemical Half-Reaction Mechanisms and Identifying the Unique Features Thereof

#### Jennifer Hu

Thesis in the field of Cognitive Science submitted to the Department of Brain and Cognitive Sciences: Neural Language Models and Human Linguistic Knowledge

#### Miao Hu

(September, 2022) Thesis in the field of Physics: Precision Measurements of the Vector Boson Scattering Production and Searches for Charged Higgs Bosons at the Large Hadron Collider

#### Sofia Hu

(September, 2022) Thesis in the field of Biology: Transcription Factor Antagonism Regulates Heterogeneity in Embryonic Stem Cell States

### Jingcheng Huang

(September, 2022) Thesis in the field of Chemistry submitted to the Department of Chemistry: Planetary Science Meets Chemistry: Studying Potential Biosignature Gases in Terrestrial Exoplanet Atmospheres

#### Yiwen Huang

(February, 2023) Thesis in the field of Physics, Statistics, and Data Science submitted to the Department of Physics: Systematic and Statistical Uncertainties in the Characterization of Gravitational-Wave Sources

### Keith Edward Laurence Husted

(February, 2023) Thesis in the field of Chemistry submitted to the Department of Chemistry: Design and Synthesis of Polymer Networks and Branched Polymers for Triggered Deconstruction and Self-Assembly

### Anna Ivanova

(September, 2022) Thesis in the field of Cognitive Science submitted to the Department of Brain and Cognitive Sciences: The Role of Language in Broader Human Cognition: Evidence from Neuroscience

#### Nima Jaberi-Lashkari

Thesis in the field of Biology: Low Complexity Regions in Biological Matter: Sequences, Higher-Order Assembly, and Evolution

#### Onyu Jung

(September, 2022) Thesis in the field of Chemistry submitted to the Department of Chemistry: The Role of Surface Coverage of Reaction Intermediates in Heterogeneous Electrocatalysis

#### Nicholas William Kamp

Thesis in the field of Physics: Experimental and Phenomenological Investigations of the MiniBooNE Anomaly

### Alexander Elliot Kissinger Kaplan

Thesis in the field of Chemistry submitted to the Department of Chemistry: Coherence, Dephasing, and Quantum Interference in Colloidal Perovskite Nanocrystals

### Meghann Rebecca Kasal

Thesis in the field of Biochemistry submitted to the Department of Biology: Lon Degrades Stable Substrates Slowly but with Enhanced Processivity, Redefining the Attributes of a Successful AAA+ Protease

### Changhae Andrew Kim

(September, 2022) Thesis in the field of Chemistry submitted to the Department of Chemistry: I. Kinetic Modeling of Surface Reactions II. Computational Design of Organic Semiconductors

#### Jungsoo Kim

Thesis in the field of Neuroscience submitted to the Department of Brain and Cognitive Sciences: The Flexible Mind of a Worm: The Atlas of Brain-Wide Representations of Behavior in *C. elegans* 

### Younhun Kim

(February, 2023) Thesis in the field of Mathematics: Algorithms for Reconstructing Biological History from Genomic Data

#### James Levi Knippel

Thesis in the field of Chemistry submitted to the Department of Chemistry: Development of Stereoselective Hydrofunctionalization Reactions Enabled by Dual Copper (I) Hydride and Palladium Catalysis

#### Matthieu Kohl

(February, 2023) Thesis in the field of Atmospheric Science submitted to the Department of Earth, Atmospheric, and Planetary Sciences: Moist Macroturbulence and Baroclinic Instability of the Midlatitude Atmosphere

#### Sergei Korotkikh

Thesis in the field of Mathematics: New Degrees of Freedom in Integrable Models with q-Hahn Weights and Their Applications to Symmetric Functions and Probability

### Leo Kozachkov

(February, 2023) Thesis in the field of Neuroscience submitted to the Department of Brain and Cognitive Sciences: Achieving Stable and Brain-Like Dynamics in Neural Circuits via Contraction Analysis

#### Luis Kumanduri

Thesis in the field of Mathematics: Homotopically Nontrivial Area Contracting Maps

#### Ethan Lake

Thesis in the field of Physics: Many-Body Physics of Kinetically Constrained Systems

#### Daniel William Laorenza

Thesis in the field of Chemistry submitted to the Department of Chemistry: Molecular Color Centers

#### Nhat Minh Le

(September, 2022) Thesis in the field of Neuroscience and Statistics submitted to the Department of Brain and Cognitive Sciences: Behavioral Strategies and Neural Mechanisms for Dynamic Foraging

### Byron Lee

(February, 2023) Thesis in the field of Biology: A Unified View of Protein Low-Complexity Regions (LCRS) across Species

#### **Choongman Lee**

(February, 2023) Thesis in the field of Physics: Targeting and Manipulating Endogenous Transcriptional Condensates

#### Eugene Li Qun Lee

(February, 2023) Thesis in the field of Neuroscience submitted to the Department of Brain and Cognitive Sciences: Temporal Pattern Processing by the Nematode *Caenorhabditis elegans* 

#### Hyunseok Lee

(February, 2023) Thesis in the field of Physics: Emergent Behaviors in Microbial Communities

### Michael Jinsuk Lee

(September, 2022) Thesis in the field of Cognitive Science submitted to the Department of Brain and Cognitive Sciences: Rapid Human Learning via Low-Dimensional Perceptual Space

#### Sangbaek Lee

(September, 2022) Thesis in the field of Physics: Measurement of the Deeply Virtual Compton Scattering Cross Section from the Proton at 10.6 GeV Using the CLAS12 Detector

#### Yi Ning Leow

Thesis in the field of Neuroscience submitted to the Department of Brain and Cognitive Sciences: Multiplexed Representations of Uncertainty by Mouse Pulvinar-Prefrontal Projections during Goal-Directed Behaviors

#### Calvin Leung

Thesis in the field of Physics: Localization and Lensing of Fast Radio Bursts Using CHIME/FRB and its VLBI Outriggers

#### Abraham Lewis Levitan

Thesis in the field of Physics: Studying Electronic Textures with Coherent Lensless Imaging

#### Talya Sophia Levitz

(February, 2023) Thesis in the field of Biochemistry submitted to the Department of Biology: A Biochemical Study of the Neisseria Gonorrhoea Ribonucleotide Reductase

### Andrew James Lew

(February, 2023) Thesis in the field of Chemistry submitted to the Department of Chemistry: Elucidating Structure-Property Relationships for Targeted Materials Mechanical Design

#### Junang Li

(September, 2022) Thesis in the field of Physics, Statistics, and Data Science submitted to the Department of Physics: Thermodynamics of Biological Active Matter

#### Zeyang Li

Thesis in the field of Physics: Exploring Novel Quantum Physics Using Ytterbium-171 in An Optical Cavity

#### Andrew John Licini

Thesis in the field of Chemistry submitted to the Department of Chemistry: Electrolysis of Molten Polyphosphate Salts Generates P4 and O2: Selectivity, Kinetics, and Stability Behind a Promising Alternative to Carbothermal Phosphate Reduction

### Grace Yun Liu

(February, 2023) Thesis in the field of Biology: The Evolution of Nutrient Sensing in the mTORC1 Pathway

#### Jinghui Liu

(September, 2022) Thesis in the field of Physics: Topology, Symmetry, and Mechanics: Deciphering and Controlling Information Flows in a Living Cell

### Chun Hong Lo

(September, 2022) Thesis in the field of Mathematics: Gromov Witten Invariants of Blow Ups of Projective Plane using Logarithmic Geometry

#### Peter Yucheng Lu

(September, 2022) Thesis in the field of Physics: Interpretable Physics-informed Machine Learning Methods for Scientific Modeling and Data Analysis

#### Shaoxiong Luo

Thesis in the field of Chemistry submitted to the Department of Chemistry: Complexing Carbon Nanomaterials and Reactive Metal Species for Selective Chemical Sensing and Tunable Catalysis

#### Victoria Maria Marando

Thesis in the field of Chemistry submitted to the Department of Chemistry: Chemical Biology Tools to Study Bacterial Cell Surface Glycans

#### **Craig Robert Martin**

Thesis in the field of Geology submitted to the Department of Earth, Atmospheric, and Planetary Sciences: Tectonostratigraphy of the Shyok Suture Zone in Ladakh, NW India.

#### Nicholas Freeman Mehrle

Thesis in the field of Physics: Studies in Planetary Atmospheres

#### **Enrique Mendez**

Thesis in the field of Physics: On the Generation of Entanglement in Yb Clock Atoms and a New Interpretation of the Madelung Fluid Theory of Quantum Mechanics

### Angel Mojarro

(February, 2023) Thesis in the field of Geochemistry submitted to the Department of Earth, Atmospheric, and Planetary Sciences: Experiments on Biomarker Preservation

#### **Daniel Patrick Montgomery**

(February, 2023) Thesis in the field of Neuroscience submitted to the Department of Brain and Cognitive Sciences: Dissecting the Cortical Circuitry Underlying Stimulus-Selective Response Plasticity

#### Mitchell Murdock

Thesis in the field of Neuroscience submitted to the Department of Brain and Cognitive Sciences: Clearance Systems at the Brain's Borders

### Aditya Nandy

Thesis in the field of Chemistry submitted to the Department of Chemistry: Using Data-Driven Models to Understand Transition Metal Catalyst Energy Landscapes and Metal-Organic Framework Stability

#### Kwan Yeung Ng

(September, 2022) Thesis in the field of Physics: Exploring Fundamental Physics and Astrophysics with Gravitational-Wave Sources

#### Kim Bich Nguyen

(February, 2023) Thesis in the field of Biology: Understanding the Impact of Intratumor Heterogeneity on the Anti-Tumor Immune Response

#### Yiqi Ni

Thesis in the field of Physics: Atoms and Molecules Immersed in a Bose-Einstein Condensate

#### Prajwal Niraula

Thesis in the field of Planetary Sciences submitted to the Department of Earth, Atmospheric, and Planetary Sciences: Towards Robust Inferences about Exoplanets and Their Atmospheres

#### Halie Ann Olson

Thesis in the field of Neuroscience submitted to the Department of Brain and Cognitive Sciences: Development of Language in the Minds and Brains of Children

### Juliana J. Park

(February, 2023) Thesis in the field of Physics: Quantum Controlled Collisions and Magnetic Trapping of Ultracold NaLi Molecules

### **Gregory Jacob Parker**

(September, 2022) Thesis in the field of Mathematics: Gluing  $Z_{\rm 2}\text{-Harmonic Spinors on 3-Manifolds}$ 

#### **Michael Tyrel Payne**

(September, 2022) Thesis in the field of Chemistry submitted to the Department of Chemistry: Supporting Well-Defined Platinum Group Metals in Metal-Organic Frameworks for Heterogeneous Catalysis

#### **Collin Fisher Perkinson**

Thesis in the field of Chemistry submitted to the Department of Chemistry: Interfacial Engineering and Spectroscopy of Spin-Triplet Excitons for Singlet Fission Sensitization of Silicon Solar Cells

#### **Oron Y. Propp**

Thesis in the field of Mathematics: A Coherent Categorification of the Asymptotic Affine Hecke Algebra

#### Yi Qu

(September, 2022) Thesis in the field of Chemistry submitted to the Department of Chemistry: Quasi-One-Dimensional van der Waals Lattices with Diverse Magnetism: New Platforms Towards Ultrathin Magnetic Nanowires

#### Meghana Ilsa Ranganathan

and Fracture of Glacier Ice

(September, 2022) Thesis in the field of Climate Science submitted to the Department of Earth, Atmospheric, and Planetary Sciences: How Deformation Influences the Flow

### **Elaine Christy Reichert**

Thesis in the field of Chemistry submitted to the Department of Chemistry: Development of Deactivation-Resistant Catalysts for Pd-Catalyzed C–N Cross-Coupling Reactions

### Gregory W. Ridgway

(September, 2022) Thesis in the field of Physics: Exotic Dark Matter in the Early Universe

### Martin-Louis Yoojin Riu

(September, 2022) Thesis in the field of Chemistry submitted to the Department of Chemistry: Synthesis and Reactivity of Phosphorus-Containing Heterocycles and Tetrahedranes

### Brandon Michael Roach

Thesis in the field of Physics: Novel X-Ray and Antinucleus Searches for Dark Matter

#### Aaron Michael Rosenthal

(February, 2023) Thesis in the field of Physics: Experimental Studies of Neutral Particle Effects on Edge Transport Barriers Using the Lyman-alpha Measurement Apparatus

#### Alyssa Marie Rudelis

Thesis in the field of Physics: A Cavity-Coupled Rydberg Atom Array Platform for Quantum Computing

#### Azin Saebi

(September, 2022) Thesis in the field of Chemistry submitted to the Department of Chemistry: Protein Synthesis and Bioconjugation for Design of Antimicrobial Proteins

#### Chiara Pancaldo Salemi

(September, 2022) Thesis in the field of Physics: The First Laboratory Searches for Low-Mass Axion Dark Matter

#### Andrew Tadashi Salmon

Thesis in the field of Mathematics: Nearby Cycles and the Cohomology of Shtukas

#### Kiera Marie Sapp

Thesis in the field of Biology: The Influence of Cellular Redox State on Mitosis

### Sarah Leah Schwartz

(September, 2022) Thesis in the field of Microbiology submitted to the Department of Biology: The Evolution and Diversity of Non-Canonical Microbial Nitrogen Metabolisms

#### Tony Z. Scott

(February, 2023) Thesis in the field of Chemistry submitted to the Department of Chemistry: Total Synthesis of Oligomeric Cyclotryptamine Alkaloids

### Efrain Patrick Dai Segarra

(September, 2022) Thesis in the field of Physics: Disentangling the EMC Effect: From Free to Bound Nucleon Structure

#### Airlia Shaffer-Moag

Thesis in the field of Physics: Bosonic Quantum Hall States from Rapidly Rotating Bose-Einstein Condensates

#### Kasturi Sanjiv Shah

(February, 2023) Thesis in the field of Climate Physics and Chemistry submitted to the Department of Earth, Atmospheric, and Planetary Sciences: Layer-Layer Interactions in Atmospheric, Cryospheric, and Stellar Dynamics

### Yizhi Shen

(February, 2023) Thesis in the field of Chemistry submitted to the Department of Chemistry: Molecular Optimization for Classical and Quantum Condensed Phase Systems

#### Charlie Shi

(February, 2023) Thesis in the field of Biology: Molecular Mechanism and Biological Scope of Target-Directed MicroRNA Degradation

#### Gunter Badji Sissoko

Thesis in the field of Cell Biology submitted to the Department of Biology: Investigating the Role of Inner Kinetochore Higher-Order Assembly in Kinetochore Function

### Shwetha Srinivasan

(September, 2022) Thesis in the field of Chemistry submitted to the Department of Chemistry: Resolving Signal Transduction in Complex Biological Environments

#### Suppachai Srisantitham

Thesis in the field of Chemistry submitted to the Department of Chemistry: Study of Nitrogenase Cofactors Bound to Nitrogenase Carrier Proteins

#### Weiwei Sun

(February, 2023) Thesis in the field of Chemistry submitted to the Department of Chemistry: Investigating Photophysics in Colloidal Semiconductor Quantum Dots through Photon-Correlation Methods

#### Ethan William Sussman

Thesis in the field of Mathematics: Scattering at Threshold in Massive Wave Propagation and Ionization

#### Graeme D. Sutcliffe

(February, 2023) Thesis in the field of Physics: Experimental Studies of Magnetic Field Generation and Saturation Mechanisms in Laser-Driven Plasmas

#### Sebastian Robles Swanson

Thesis in the field of Computational and Systems Biology submitted to the Department of Biology: Computational Methods for the Structure-Based Design of Protein Binding Peptides

#### James Christopher Taggart

(September, 2022) Thesis in the field of Molecular Biology submitted to the Department of Biology: Defining the Precision and Sequence Determinants of Protein Synthesis Rates

#### James Hope Tao

Thesis in the field of Mathematics: Double Affine Galleries

### Henry Khoa Tran

(September, 2022) Thesis in the field of Chemistry submitted to the Department of Chemistry: Quantum Embedding Methods for the Accurate Ground and Excited Electronic Structure of Large Molecular Systems

### Francesca Anatilde Vaccaro

Thesis in the field of Chemistry submitted to the Department of Chemistry: Structural Investigations of Adenosylcobalamin-Dependent Enzyme Maturation

#### **Eeshit Dhaval Vaishnav**

(September, 2022) Thesis in the field of Genetics submitted to the Department of Biology: Evolution, Evolvability, Expression and Engineering

#### Max Louis Valenstein

(September, 2022) Thesis in the field of Biochemistry submitted to the Department of Biology: Integration of Amino Acid Signals by the mTORC1 Pathway

#### Dimitra Vardalaki

Thesis in the field of Neuroscience submitted to the Department of Brain and Cognitive Sciences: Functional and Ultrastructural Investigation of Mouse and Human Dendritic Spines

#### Sheena L. S. Vasquez

Thesis in the field of Biophysical Chemistry and Molecular Structure submitted to the Department of Biology: Biophysical Investigations of the Cytosolic Iron-Sulfur Cluster Assembly Late Acting Proteins

#### Loyd Hoyt Waites III

(February, 2023) Thesis in the field of Physics: Design, Tools, and Applications of the IsoDAR Cyclotron

#### **Ruomeng Wan**

Thesis in the field of Chemistry submitted to the Department of Chemistry: Probing Exciton Dynamics in Metal–Organic Frameworks

#### Joyce Wang

Thesis in the field of Neuroscience submitted to the Department of Brain and Cognitive Sciences: Investigating the Role of Thalamic Activity in Visual Cortical Plasticity

### Elizabeth Mari Ward

(September, 2022) Thesis in the field of Biology: Directed Evolution of Glycan-Binding Proteins

### **Gwyneth Margaret Welch**

(September, 2022) Thesis in the field of Neuroscience submitted to the Department of Brain and Cognitive Sciences: Mechanisms of DNA Double Strand Break-Mediated Neurotoxicity in Neurodegenerative Disease

### **Christopher Mark Whittle**

Thesis in the field of Physics: Quantum Optics and Mechanics in Gravitational-Wave Detectors

### Julia Wilcots

(September, 2022) Thesis in the field of Geology submitted to the Department of Earth, Atmospheric, and Planetary Sciences: Dolomite as a Paleoenvironmental Archive

### **Cedric Chinua Wilson**

(February, 2023) Thesis in the field of Physics: Geometric Squeezing of a Degenerate Fermi Gas

#### Jessica Xu

(September, 2022) Thesis in the field of Chemistry submitted to the Department of Chemistry: Pd–Catalyzed Cross–Coupling, High Throughput Experimentation, and Machine Learning

#### Sophia Ye Xu

(February, 2023) Thesis in the field of Biochemistry submitted to the Department of Biology: A Natural Product-Guided Exploration of Mitochondrial Aldehyde Dehydrogenase

#### Xiyun Ye

Thesis in the field of Chemistry submitted to the Department of Chemistry: Affinity Maturation of Peptides to Bind the Protein-Protein Interface

#### **Cagin Yunus**

Thesis in the field of Physics, Statistics, and Data Science submitted to the Department of Physics: Monte Carlo Sampling of Lattice Field Theories

## Maria Zagorulya

(February, 2023) Thesis in the field of Immunology submitted to the Department of Biology: Dendritic Cell Dysfunction Restrains Cytotoxic T Cell Responses against Cancer

#### **Cristian Zanoci**

Thesis in the field of Physics: Quantum Phase Transitions and Non-Equilibrium Dynamics in Many-Body Systems

#### Juanye Zhang

(September, 2022) Thesis in the field of Chemistry submitted to the Department of Chemistry: Surface Modifications of Iron Oxide Nanoparticles for Magnetic Imaging and Diagnosis

#### Lingxian Zhang

Thesis in the field of Mathematics: Application of High-Low Method to Distance Problems

#### Yichi Zhang

(September, 2022) Thesis in the field of Mathematics: Information-Theoretic Constraints on Particle Systems

#### Zhiyu Zhang

(September, 2022) Thesis in the field of Mathematics: Arithmetic Transfers, Modularity of Arithmetic Theta Series, and Geometry of Local-Global Shimura Varieties at Parahoric Levels

#### Weishun Zhong

Thesis in the field of Physics: Non Equilibrium Physics: From Spin Glasses to Machine and Neural Learning

#### David Wei Zhou

(September, 2022) Thesis in the field of Neuroscience submitted to the Department of Brain and Cognitive Sciences: Alpha Thalamocortical Networks during Propofol General Anesthesia and Disorders of Consciousness

#### Jinxiang Zhu

(February, 2023) Thesis in the field of Physics: Data-Driven Study of Major Disruption Prediction and Plasma Instabilities across Multiple Tokamaks

#### Junbo Zhu

Thesis in the field of Physics: Magnetoresistance and Thermoelectricity in Low Dimensional Semi-metallic System

# AWARDED JOINTLY WITH THE WOODS HOLE OCEANOGRAPHIC INSTITUTION, DOCTORAL

## **Doctor of Philosophy**

#### **Benjamin James Ayton**

(September, 2022) Thesis in the field of Autonomous Systems submitted to the Department of Aeronautics and Astronautics: Query-Driven Adaptive Sampling

#### **Cynthia Carroll Becker**

Thesis in the field of Biological Oceanography submitted to the Department of Earth, Atmospheric, and Planetary Sciences: Examining Coral Reef Ecosystem Dynamics Using Microorganisms and Metabolites

#### **Tong Bo**

Thesis in the field of Civil and Environmental and Oceanographic Engineering submitted to the Department of Civil and Environmental Engineering: Impacts of Channel Curvature on Drag, Mixing, and Stratification in Estuaries

### **Rebecca Jane Chmiel**

(February, 2023) Thesis in the field of Chemical Oceanography submitted to the Department of Earth, Atmospheric, and Planetary Sciences: Distributions and Perturbations of the Marine Dissolved Cobalt Cycle in a Changing Ocean

#### **Fiona Clerc**

(February, 2023) Thesis in the field of Geophysics submitted to the Department of Earth, Atmospheric, and Planetary Sciences: Insights from Geodynamic Models into Ice Flow, Mantle Magmatism, and their Interactions

#### **Emmanuel Avila Codillo**

(February, 2023) Thesis in the field of Geochemistry submitted to the Department of Earth, Atmospheric, and Planetary Sciences: Mass Transfer and Chemical Interactions in Subduction Zones

# Beckett Casper Colson

(February, 2023) Thesis in the field of Mechanical and Oceanographic Engineering submitted to the Department of Mechanical Engineering: Developing *In Situ* Instrumentation to Monitor Anthropogenic Change

#### **Kevin Joseph Doherty**

(February, 2023) Thesis in the field of Autonomous Systems submitted to the Department of Aeronautics and Astronautics: Lifelong, Learning-Augmented Robot Navigation

#### Lauren Nichole Dykman

(February, 2023) Thesis in the field of Biological Oceanography submitted to the Department of Earth, Atmospheric, and Planetary Sciences: Marine Parasites in Island-Like Disturbed Habitats

#### **Genevieve Elaine Flaspohler**

(September, 2022) Thesis in the field of Electrical Engineering and Computer Science: Balancing Exploration and Exploitation: Task-Targeted Exploration for Scientific Decision-Making

# Adrian Mikhail Palaci Garcia

(September, 2022) Thesis in the field of Civil and Environmental and Oceanographic Engineering submitted to the Department of Civil and Environmental Engineering: Mechanisms of Tidal Dispersion in a Salt Marsh Estuary

#### Kalina Cozette Grabb

(September, 2022) Thesis in the field of Chemical Oceanography submitted to the Department of Earth, Atmospheric, and Planetary Sciences: Evaluating the Role of Reactive Oxygen Species (ROS) Cycling within Coastal Ecosystems in Relation to Organism Health

#### Benjamin Nash Granzow

(February, 2023) Thesis in the field of Chemical Oceanography submitted to the Department of Earth, Atmospheric, and Planetary Sciences: Chemical Controls on the Cycling and Reactivity of Marine Dissolved Organic Matter

#### Jing He

Thesis in the field of Physical Oceanography submitted to the Department of Earth, Atmospheric, and Planetary Sciences: Modeling Ocean Transport and Its Biogeochemical Impacts at Global, Regional, and Sub-Meso Scales

#### Andrew Joseph Hirzel

(February, 2023) Thesis in the field of Biological Oceanography submitted to the Department of Earth, Atmospheric, and Planetary Sciences: Biological and Physical Processes at the Middle Atlantic Bight Shelf-Break Front

#### Ellen Lalk

(February, 2023) Thesis in the field of Geochemistry submitted to the Department of Earth, Atmospheric, and Planetary Sciences: The Biogeochemistry of Methane Isotopologues in Marine and Lacustrine Sediments

### Jingxuan Li

Thesis in the field of Chemical Oceanography submitted to the Department of Earth, Atmospheric, and Planetary Sciences: Siderophore Cycling in the North Pacific Subtropical Gyre

#### Lei Ma

(September, 2022) Thesis in the field of Biological Oceanography submitted to the Department of Earth, Atmospheric, and Planetary Sciences: The Many Facets of Marine Microbial Symbiosis

#### Rose Palermo

(September, 2022) Thesis in the field of Marine Geology submitted to the Department of Earth, Atmospheric, and Planetary Sciences: Coastline Evolution on Earth and Titan Victoria Lynn Preston (February, 2023) Thesis in the field of Autonomous Systems submitted to the Department of Aeronautics and Astronautics: Perceive, Predict, and Plan: Robotic Expeditionary Science in Oceanic Spatiotemporal Fields

# MILITARY COMMISSIONS

# **United States Air Force**

Second Lieutenant Catherine Johnson Matthew McGillick John Pendergrast Kaira Samuel Jupneet Singh Olivia Tobin Brendan Vaughan

# **United States Army**

Second Lieutenant Aden Rothmeyer Eric Wooten

# **United States Marine Corps**

Second Lieutenant Andrew Cummings

# **United States Navy**

Ensign Frederick Humm Albert Kwon Juliet Liao Joshua Malone Andrew Manwaring Andrew Motz Daniel Saavedra

# **United States Space Force**

Second Lieutenant Matthew Clingerman

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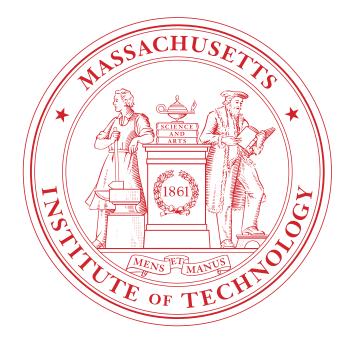
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