

# Michael Posa

## Curriculum Vitae

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## Education

- 2017 **Ph.D.**, *Massachusetts Institute of Technology*.  
Electrical Engineering and Computer Science  
Advisor: Russ Tedrake  
Dissertation: Optimization for control and planning of multi-contact dynamic motion  
Committee: Tomás Lozano-Perez (MIT), Sertac Karaman (MIT), Andy Ruina (Cornell)
- 2008 **M.S.**, *Stanford University*.  
Master of Science in Mechanical Engineering
- 2007 **B.S.**, *Stanford University*.  
Bachelor of Science in Mechanical Engineering

## Academic Positions

- 2025–present **Associate Professor**, *University of Pennsylvania*, Mechanical Engineering and Applied Mechanics, Electrical and Systems Engineering (secondary), Computer and Information Science (secondary), General Robotics, Automation, Sensing and Perception (GRASP) Laboratory.
- 2017–2025 **Assistant Professor**, *University of Pennsylvania*.

## Industrial Positions

- 2008-2011 **Robotics Engineer**, *Vecna Robotics*, Cambridge, MA.

## Awards and Honors

- 2024 Best Paper Award, IEEE-RAS Technical Committee on Model-Based Optimization for Robotics
- 2024 Outstanding Student Paper Award, Robotics: Science and Systems
- 2023 RSS Early Career Spotlight Award
- 2023 NSF CAREER Award
- 2022 Honorable Mention for the IEEE Transactions on Robotics King-Sun Fu Memorial Best Paper Award
- 2022 Finalist for Outstanding Dynamics and Control Paper Award, IEEE International Conference on Robotics and Automation

- 2021 Finalist for Best Paper Award, IEEE-RAS Technical Committee on Model-Based Optimization for Robotics
- 2016 Finalist for Best Oral Paper, IEEE-RAS International Conference on Humanoid Robotics
- 2013 Best Paper Award, Hybrid Systems: Computation and Control
- 2013 Rolf Locher Graduate Fellowship, Massachusetts Institute of Technology
- 2011 NSF Graduate Research Fellowship Honorable Mention
- 2007 Frederick E. Terman Award for Scholastic Achievement in Engineering, Stanford University

## Journal Publications

- [1] Brian Acosta and **Michael Posa**. Perceptive Mixed-Integer Footstep Control for Underactuated Bipedal Walking on Rough Terrain. *Accepted to IEEE Transactions on Robotics*, 2025.
- [2] Alp Aydinoglu, Adam Wei, Wei-Cheng Huang, and **Michael Posa**. Consensus Complementarity Control for Multi-contact MPC. *IEEE Transactions on Robotics*, 40:3879-3896, 2024.  
**[Best Paper Award, IEEE-RAS Technical Committee on Model-Based Optimization for Robotics]**
- [3] Mathew Halm and **Michael Posa**. Set-Valued Rigid Body Dynamics for Simultaneous Frictional Impact. *The International Journal of Robotics Research*, 43(10):1594-1628, 2024.
- [4] Yu-Ming Chen, Jianshu Hu, and **Michael Posa**. Beyond Inverted Pendulums: Task-optimal Simple Models of Legged Locomotion. *IEEE Transactions on Robotics*, 40:2582-2601, 2024.
- [5] Wanxin Jin and **Michael Posa**. Task-Driven Hybrid Model Reduction for Dexterous Manipulation. *IEEE Transactions on Robotics*, 40:1774-1794, 2024.
- [6] Patrick Wensing, **Michael Posa**, Yue Hu, Adrien Escande, Nicolas Mansard, and Andrea Del Prete. Optimization-Based Control for Dynamic Legged Robots. *IEEE Transactions on Robotics*, 40:43-63, 2024.
- [7] Brian Acosta\*, William Yang\*, and **Michael Posa**. Validating Robotics Simulations Through Real World Impacts. *IEEE Robotics and Automation Letters*, 7(3):6471-6478, 2022.
- [8] Alp Aydinoglu, Philip Sieg, Victor Preciado, and **Michael Posa**. Stabilization of Complementarity Systems via Contact-Aware Controllers. *IEEE Transactions on Robotics*, 38(3):1735-1754, 2022.  
**[Honorable Mention for the IEEE Transactions on Robotics King-Sun Fu Memorial Best Paper Award]**  
**[Finalist for Best Paper Award, IEEE-RAS Technical Committee on Model-Based Optimization for Robotics]**
- [9] **Michael Posa**, Mark Tobenkin, and Russ Tedrake. Stability analysis and control of rigid-body systems with impacts and friction. *IEEE Transactions on Automatic Control*, 61(6):1423-1437, 2016.
- [10] **Michael Posa**, Cecilia Cantu, and Russ Tedrake. A direct method for trajectory optimization of rigid bodies through contact. *International Journal of Robotics Research*, 33(1):69-81, 2014.

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Underlined authors are or were members of Michael Posa's research group.

- [11] Maurice Fallon, Scott Kuindersma, Sisir Karumanchi, Matthew Antone, Toby Schneider, Hongkai Dai, Claudia Pérez D'Arpino, Robin Deits, Matt DiCicco, Dehann Fourie, Twan Koolen, Pat Marion, **Michael Posa**, Andrés Valenzuela, Kuan-Ting Yu, Julie Shah, Karl Iagnemma, Russ Tedrake, and Seth Teller. An architecture for online affordance-based perception and whole-body planning. *Journal of Field Robotics*, 32(2):229-254, 2014.

## Peer-reviewed Conference Publications

- [12] Bibit Bianchini\*, Minghan Zhu\*, Mengti Sun, Bowen Jiang, Camillo Jose Taylor, and **Michael Posa**. Vysics: Object Reconstruction Under Occlusion by Fusing Vision and Contact-Rich Physics. *Accepted to Robotics: Science and Systems*, 2025.
- [13] William Yang and **Michael Posa**. Dynamic On-Palm Manipulation via Controlled Sliding. *Robotics: Science and Systems*, 2024. **[Outstanding Student Paper Award]**
- [14] Hien Bui and **Michael Posa**. Enhancing Task Performance of Learned Simplified Models via Reinforcement Learning. *IEEE International Conference on Robotics and Automation*, 2024.
- [15] Yu-Ming Chen, Hien Bui, and **Michael Posa**. On-policy Learning for Reduced-order Models of Legged Robots. *IEEE International Conference on Robotics and Automation*, 2024.
- [16] Wei-Cheng Huang\*, Alp Aydinoglu\*, Wanxin Jin, and **Michael Posa**. Adaptive Contact-Implicit Model Predictive Control with Online Residual Learning. *IEEE International Conference on Robotics and Automation*, 2024.
- [17] Brian Acosta and **Michael Posa**. Bipedal Walking on Constrained Footholds with MPC Footstep Control. *IEEE-RAS International Conference on Humanoid Robotics*, 2023.
- [18] Bibit Bianchini, Mathew Halm, and **Michael Posa**. Simultaneous Learning of Contact and Continuous Dynamics. *The Conference on Robot Learning*, 2023.
- [19] Leon Kim, Yunshuang Li, **Michael Posa**, and Dinesh Jayaraman. Im2Contact: Vision-Based Contact Localization Without Touch or Force Sensing. *The Conference on Robot Learning*, 2023.
- [20] Yu-Ming Chen, Gabriel Nelson, Robert Griffin, **Michael Posa**, and Jerry Pratt. Integrable Whole-body Orientation Coordinates for Legged Robots. *IEEE/RSJ Conference on Intelligent Robotics and Systems*, 2023.
- [21] Wanxin Jin, Alp Aydinoglu, Mathew Halm, and **Michael Posa**. Learning Linear Complementarity Systems. *Learning for Dynamics and Control Conference*, 2022.
- [22] Bibit Bianchini, Mathew Halm, Nikolai Matni, and **Michael Posa**. Generalization Bounded Implicit Learning of Nearly Discontinuous Functions. *Learning for Dynamics and Control Conference*, 2022.
- [23] Alp Aydinoglu and **Michael Posa**. Real-Time Multi-Contact Model Predictive Control via ADMM. *IEEE International Conference on Robotics and Automation*, 2022. **[Finalist for Outstanding Dynamics and Control Paper Award]**
- [24] William Yang and **Michael Posa**. Impact Invariant Control with Applications to Bipedal Locomotion. *IEEE/RSJ Conference on Intelligent Robotics and Systems*, 2021.
- [25] Mihir Parmar\*, Mathew Halm\*, and **Michael Posa**. Fundamental Challenges in Deep Learning of Stiff Contact Dynamics. *IEEE/RSJ Conference on Intelligent Robotics and Systems*, 2021.

- [26] [Alp Aydinoglu](#), [Mahyar Fazlyab](#), [Manfred Morari](#), and **Michael Posa**. Stability Analysis of Complementarity Systems with Neural Network Controllers. *Hybrid Systems: Computation and Control*, 2021.
- [27] [Samuel Pfrommer\\*](#), [Mathew Halm\\*](#), and **Michael Posa**. ContactNets: Learning of Discontinuous Contact Dynamics with Smooth, Implicit Representations. *Conference on Robot Learning*, 2020.
- [28] [Alp Aydinoglu](#), [Victor Preciado](#), and **Michael Posa**. Contact-Aware Controller Design for Complementarity Systems. *IEEE International Conference on Robotics and Automation*, 2020.
- [29] [Yu-Ming Chen](#) and **Michael Posa**. Optimal Reduced-order Modeling of Bipedal Locomotion *IEEE International Conference on Robotics and Automation*, 2020.
- [30] [Mathew Halm](#) and **Michael Posa**. Modeling and Analysis of Non-unique Behaviors in Multiple Frictional Impacts. *Robotics: Science and Systems*, 2019.
- [31] [Mathew Halm](#) and **Michael Posa**. A Quasi-static Model and Simulation Approach for Pushing, Grasping, and Jamming. *The Workshop on the Algorithmic Foundations of Robotics*, 2018.
- [32] **Michael Posa**, [Twan Koolen](#), and [Russ Tedrake](#). Balancing and Step Recovery Capturability via Sums-of-Squares Optimization. *Robotics: Science and Systems*, 2017.
- [33] [Twan Koolen](#), **Michael Posa**, and [Russ Tedrake](#). Balance control using center of mass height variation: limitations imposed by unilateral contact. *IEEE-RAS International Conference on Humanoid Robotics*, 2016. **[Finalist for Best Oral Paper Award]**
- [34] **Michael Posa**, [Scott Kuindersma](#), and [Russ Tedrake](#). Optimization and stabilization of trajectories for constrained dynamical systems. *IEEE International Conference on Robotics and Automation*, 2016.
- [35] **Michael Posa**, [Mark Tobenkin](#), and [Russ Tedrake](#). Lyapunov analysis of rigid body systems with impacts and friction via sums-of-squares. *International Conference on Hybrid Systems: Computation and Control*, 2013. **[Winner of the Best Paper Award]**
- [36] **Michael Posa** and [Russ Tedrake](#). Direct trajectory optimization of rigid body dynamical systems through contact. *The Workshop on the Algorithmic Foundations of Robotics*, 2012.

## Publications Under Review

- [37] [Minku Kim](#), [Brian Acosta](#), [Pratik Chaudhari](#), and **Michael Posa**. Learning a Vision-Based Footstep Planner for Hierarchical Walking Control. *Submitted to IEEE-RAS International Conference on Humanoid Robots*, 2025.
- [38] [Sharanya Puthige Venkatesh\\*](#), [Bibit Bianchini\\*](#), [Alp Aydinoglu](#), [William Yang](#), and **Michael Posa**. Approximately Global Contact-Implicit MPC via Sampling and Local Complementarity. *Submitted to IEEE Robotics and Automation Letters*, 2025.
- [39] [William Yang](#) and **Michael Posa**. Impact-Invariant Control: Maximizing Control Authority During Impacts. *Submitted to Autonomous Robots*, 2025.

## Grants and Funding

- 9/25-9/27 **Magna International**  
Title: Contact-rich robotic assembly via task-relevant MPC  
University of Pennsylvania, PI  
Total award: \$559,857 (100%)
- 8/23-8/26 **Robotics and AI Institute**  
Title: Object-centric learning for control of dexterous manipulation.  
University of Pennsylvania, PI  
Total award: \$1,500,000 (100%)
- 4/23-3/28 **NSF CAREER-Foundational Research in Robotics (FRR)**  
Title: Manipulation of novel objects via non-smooth implicit learning  
University of Pennsylvania, PI  
Total award: \$600,000 (100%)
- 4/21-3/24 **Toyota Research Institute Young Faculty Researchers**  
Title: Optimization of simple models for locomotion and manipulation in Drake  
University of Pennsylvania, PI  
Total award: \$650,000 (100%)
- 3/20-3/21 **NSF CMMI-Dynamics, Control and System Diagnostics (DCSD)**  
Title: Travel Funds for 15th Dynamic Walking Conference  
University of Pennsylvania, PI  
Total award: \$10,000 (100%)
- 1/20-12/24 **NSF Emerging Frontiers in Research and Innovation (EFRI)  
Continuum, Compliant, and Configurable Soft Robotics Engineering (C3 SoRo)**  
Title: 3-D surface control for object manipulation with stretchable material  
University of Pennsylvania, co-PI (2020-2023), PI (2023-2024)  
Collaborators: James Pikul (PI), Mark Yim (co-PI), Christian Santangelo (co-PI), Ryan Hayward (co-PI)  
Total award: \$2,000,000 (~20%)
- 3/19-3/20 **Google Faculty Research Award**  
Title: Structured learning of non-smooth contact dynamics  
University of Pennsylvania, PI (100%)  
Total award: \$68,291
- 9/18-9/22 **NSF National Robotics Initiative (NRI)**  
Title: Contact-aware Control of Dynamic Manipulation  
University of Pennsylvania, PI (100%)  
Total award: \$504,880 + \$8,000 REU Supplement

## Invited Talks

- May 2025 ICRA Workshop on Beyond Pick and Place—Unifying Learning-Based and Model-Based Approaches for Contact-Rich Manipulation  
“Dexterity and generalization? A path toward contact-rich model learning and control”
- May 2025 ICRA Workshop on Beyond the Lab: Robust Planning and Control in Real World Scenarios  
“Contact-rich control: dealing with uncertainty and model error”

- February 2025 AAIL Bridge Program on Learning for Integrated Task and Motion Planning  
"Towards integrated learning and control for contact-rich robotics"
- November 2024 University of Michigan  
"Differentiable algorithms for non-differentiable robotics: contact-rich learning and control"
- November 2024 New York University  
"Differentiable algorithms for non-differentiable robotics: contact-rich learning and control"
- October 2024 Johns Hopkins University  
"Implicit Learning and Control for Data-efficient, Dexterous Manipulation "
- September 2024 Yale University  
"Implicit Learning and Control for Data-efficient, Dexterous Manipulation"
- August 2024 The AI Institute  
"Can GOFE Enable Low-Data Dexterity? A Deeper Dive into Contact-Implicit Control and Model Learning"
- June 2024 Northeastern University, Institute for Experiential Robotics  
"Implicit Learning and Control for Data-efficient, Dexterous Manipulation"
- May 2024 ICRA Workshop on Loco-Manipulation: Algorithms, Challenges & Applications  
"Task-driven Learning and Control for Dexterous Loco-manipulation"
- April 2024 University of Southern California  
"Do We Really Need all that Data? Learning and Control for Contact-rich Manipulation"
- April 2024 California Institute of Technology  
"Do We Really Need all that Data? Learning and Control for Contact-rich Manipulation"
- March 2024 University of Illinois  
"Do We Really Need all that Data? Learning and Control for Contact-rich Manipulation"
- March 2024 Notre Dame University  
"Do We Really Need all that Data? Learning and Control for Contact-rich Manipulation"
- February 2024 Harvard University  
"Do We Really Need all that Data? Learning and Control for Contact-rich Manipulation"
- November 2023 Georgia Tech, Institute for Robotics and Intelligent Machines Seminar  
"Do We Really Need all that Data? Learning and Control for Contact-rich Manipulation"
- October 2023 IROS Workshop on Leveraging Models for Contact-rich Manipulation
- July 2023 Robotics: Science and Systems, Early Career Spotlight  
"The Structure of Touch: Low-Data Learning and Control"
- February 2023 Boston Dynamics AI Institute, Mobile Manipulation Workshop  
"Dexterity without big data: implicit learning and real-time control"
- February 2023 Stanford University  
"Dexterity without big data: implicit learning and real-time control"
- February 2023 University of California, Berkeley  
"Dexterity without big data: implicit learning and real-time control"

- January 2023 ETH Zurich, Autonomy Talks  
"Multi-contact learning and real-time control"
- October 2022 Rutgers University  
"Hybrid robotics and implicit learning"
- May 2022 Mitsubishi Electric Research Labs  
"Hybrid robotics and implicit learning"
- March 2022 University of Toronto  
"Hybrid robotics and implicit learning"
- March 2022 University of California, Santa Barbara  
"Hybrid robotics and implicit learning"
- Sept 2021 Massachusetts Institute of Technology  
"Contact-rich robotics: learning, impact-invariant control, and tactile feedback"
- Sept 2021 Princeton University  
"Contact-rich robotics: learning, impact-invariant control, and tactile feedback"
- Sept 2021 IROS Workshop on Impact-Aware Robotics  
"Perspectives on multi-contact robotics: deep learning, impact-invariant control, and modeling non-uniqueness"
- July 2021 RSS Workshop on Integrating Planning and Learning  
"Optimal models and non-differentiable model learning"
- June 2021 Dynamic Walking Conference  
"Perspectives on Multi-impact Robotics"
- May 2021 ACC Workshop on Fielding Legged Robotics off the Beaten Path  
"Impact-invariant Control and Bipedal Jumping"
- April 2021 Nvidia Robotics Seminar  
"Touch is discontinuous! Challenges in learning for contact-driven robotics"
- December 2020 Johns Hopkins University Applied Physics Laboratory  
"Exploiting structure in non-smooth dynamics for multi-contact learning and control"
- October 2020 20th International Conference on Control, Automation, and Systems  
"Beyond Inverted Pendulums: Optimizing Task-driven Simple Models"
- September 2020 University of Michigan  
"Bilevel optimization for control, learning, and multi-contact robotics"
- October 2019 University of California, Santa Barbara  
"Robot meet world: challenges in multi-contact locomotion and manipulation"
- July 2019 ACC Workshop on Challenges and Solutions for Legged Robotics.  
"Exploring models of contact and legged locomotion: existence, uniqueness, and optimality."
- June 2019 Google Brain, New York.  
"Robot meets world: the challenge of positive interaction in dynamic environments."
- April 2019 NASA Jet Propulsion Laboratory.  
"Robot meets world: the challenge of positive interaction in dynamic environments."

- April 2019 California Institute of Technology.  
"Robot meets world: the challenge of positive interaction in dynamic environments."
- June 2016 University of Texas at Dallas, School/Workshop on Applicable Theory of Switched Systems
- May 2016 ICRA Workshop on Robust Optimization-Based Control and Planning for Legged Robots
- April 2016 Carnegie Mellon, Center for the Foundations of Robotics Seminar
- February 2014 BIRS Workshop on Computational Contact Mechanics: Advances and Frontiers in Modeling Contact
- June 2013 RSS Workshop on Formal Methods for Robotics and Automation
- April 2013 University of Pennsylvania, Kod\*lab Lunch Seminar
- March 2013 Florida Institute of Human and Machine Cognition (IHMC), Learning Lunch

## Campus Seminars

- December 2024 University of Pennsylvania, Mechanical Engineering and Applied Mechanics Seminar
- November 2020 University of Pennsylvania, Mechanical Engineering and Applied Mechanics Seminar
- August 2017 University of Pennsylvania, Geometry Focus Group

## Professional Memberships

- IEEE Member (since 2015)
- IEEE Robotics & Automation Society Member (since 2017)
- IEEE Control Systems Society Member (since 2017)
- Tau Beta Pi (Engineering Honors Society) since 2006)

## Teaching Experience

- Spring 2020 University of Pennsylvania, MEAM 211, Engineering Mechanics: Dynamics
- Spring 2021
- Spring 2023
- Spring 2024
- Spring 2025
- Fall 2018 University of Pennsylvania, MEAM 517, Control and Optimization with Applications in Robotics
- Fall 2019
- Fall 2020
- Fall 2022
- Fall 2023
- Fall 2024
- Spring 2018 University of Pennsylvania, MEAM 535, Advanced Dynamics
- Fall 2017 University of Pennsylvania, MEAM 513, Feedback Control Systems

## Postdoctoral Researchers Supervised

- 2024– Ethan Gordon, Ph.D. from the University of Washington
- 2023– Minghan Zhu, Ph.D. from the University of Michigan  
Joint with Prof. Maani Ghaffari at the University of Michigan
- 2021–2023 Wanxin Jin, Ph.D. from Purdue University  
Next position: Asst. Prof. at Arizona State University

## Ph.D. Students Supervised

- 2024– Alina (Grey) Sarmiento, Mechanical Engineering and Applied Mechanics  
NSF GRFP Fellow
- 2021– Xuan Hien Bui, Mechanical Engineering and Applied Mechanics
- 2020– Elizabeth (Bibit) Bianchini, Mechanical Engineering and Applied Mechanics  
NDSEG Fellow  
John Goff Prize Award Winner  
Co-advised with Dan Koditschek
- 2020– Leon Kim, Electrical and Systems Engineering  
NSF GRFP Fellow  
Co-advised with Dinesh Jayaraman
- 2020–2025 Brian Acosta, Mechanical Engineering and Applied Mechanics  
NSF GRFP Fellow  
Dissertation: Real-time Perception and Mixed-integer Footstep Control for Underactuated Bipedal Walking on Rough Terrain  
Next position: Figure AI
- 2019–2024 William Yang, Mechanical Engineering and Applied Mechanics  
NSF GRFP Fellow  
Dissertation: Controlling Contact Transitions for Dynamic Robots  
Next position: Applied Scientist at Amazon Robotics
- 2019–2023 Alp Aydinoglu, Electrical and Systems Engineering  
Dissertation: Control of Multi-Contact Systems via Local Hybrid Models  
Next position: Research Engineer at Boston Dynamics
- 2018–2023 Yu-Ming Chen, Electrical and Systems Engineering  
Dissertation: Toward High-performance Simple Models of Legged Locomotion  
Next position: Applied Scientist at Boston Dynamics AI Institute
- 2018–2023 Mathew Halm, Mechanical Engineering and Applied Mechanics  
NSF GRFP Fellow  
John Goff Prize Award Winner  
Dissertation: Addressing stiffness-induced challenges in modeling and identification of for rigid-body systems with friction and impact  
Next position: Applied Scientist at Amazon Robotics

## Doctoral Dissertation Committees

- Shafagh Keyvanian, Mechanical Engineering and Applied Mechanics, University of Pennsylvania  
Jason Ma, Computer and Information Science, University of Pennsylvania  
Erica Waters, Mechanical Engineering and Applied Mechanics, University of Pennsylvania  
Timothy Greco, Mechanical Engineering and Applied Mechanics, University of Pennsylvania  
2025 Saumya Saxena, Robotics, Carnegie Mellon University  
2025 Gregory Campbell, Mechanical Engineering and Applied Mechanics, University of Pennsylvania  
2024 Jessica Yin, Mechanical Engineering and Applied Mechanics, University of Pennsylvania  
2024 Shou Yang, Mechanical Engineering, Carnegie Mellon University  
2024 Jessica (McWilliams) Weakly, Mechanical Engineering and Applied Mechanics, University of Pennsylvania  
2024 J. Diego Caporale, Mechanical Engineering and Applied Mechanics, University of Pennsylvania  
2023 Shane Rozen-Levy, Mechanical Engineering and Applied Mechanics, University of Pennsylvania  
2023 Laura Jarin-Lipschitz, Mechanical Engineering and Applied Mechanics, University of Pennsylvania  
2023 David Levine, Mechanical Engineering and Applied Mechanics, University of Pennsylvania  
2022 Nathan Kong, Mechanical Engineering, Carnegie Mellon University  
2022 Andrew Specian, Mechanical Engineering and Applied Mechanics, University of Pennsylvania  
2018 Mabel Zhang, Computer and Information Science, University of Pennsylvania  
2018 Sarah Tang, Mechanical Engineering and Applied Mechanics, University of Pennsylvania

## Masters Theses Supervised

- 2025 Minku Kim, M.S. Mechanical Engineering  
MEAM Outstanding Research Award Winner  
Next position: Ph.D. Candidate at Oregon State University  
2024 Sharanya Venkatesh, M.S. Robotics  
2020 Nanda Vasudevan, M.S. Robotics  
Next position: Tesla Motors  
2019 Tianze Wang, M.S. Electrical Engineering  
Next position: Ph.D. candidate at Florida State University  
2019 Yuhan Zhao, M.S. Robotics  
Next position: Ph.D. Candidate at New York University

## Non-thesis Masters Research Supervised

- 2025– Thomas Stephen Felix, M.S. Robotics

- 2025– Yufeyang Gao, M.S. Robotics
- 2025– Haoran Yang, M.S. Mechanical Engineering
- 2024–2025 Bruke Baraki, M.S. Robotics
- 2023–2024 Wei-Cheng Huang, M.S. Robotics  
Next position: Ph.D. Candidate at the University of Illinois Urbana-Champaign
- 2022–2023 Mengti Sun, M.S. Robotics  
Next position: Amazon
- 2021–2022 Haoxiang You, M.S. Mechanical Engineering and Applied Mechanics  
Next position: Ph.D. Candidate at Yale
- 2021–2022 Kausik Sivakumar, M.S. Robotics
- 2021–2022 Jia Shen, M.S. Robotics  
Next position: Ph.D. Candidate at Georgia Tech
- 2020–2021 David DePauw, M.S. Robotics  
Next position: Kitware
- 2020–2021 Jianshu Hu, M.S. Robotics  
Next position: Ph.D. Candidate at University of Michigan–Shanghai Jiao Tong University Joint Institute
- 2020–2021 Mihir Parmar, M.S. Robotics  
Next position: Lucid Motors
- 2020 Yike Li, M.S. Robotics  
Next position: Oracle
- 2017–2019 Shrenik Muralidhar, M.S. Robotics  
Next position: Brain Corp

## Undergraduate Projects Supervised

- 2025 Siddhant Mody, PURM
- 2025 Eric Cui, PURM
- 2024–2025 RoboPicker, senior design project
- 2024 Christine Meng, Kerry Wisonsky Internship
- 2022–2023 SMOKE-E, senior design project
- 2022 Adam Wei, visiting researcher from the University of Toronto
- 2022 Zachary Francis, visiting researcher from MIT
- 2021–2022 RogerBot, senior design project
- 2020–2023 Joah Kim, NSF NRI
- 2020–2021 Philip Sieg, NSF NRI
- 2020 Katherine Hann, Google Explore

2020 Maria Ferreira, Google Explore  
2020 Belinda Liu, Google Explore  
2020 Mirayda Martinez, Google Explore  
2020 Natalie Aziz, NSF NRI  
2020 Andrés Eskanazi, NSF NRI  
2020 Joan Shaho, NSF NRI  
2019–2020 Samuel Pfrommer, PURM and NSF REU  
2018–2020 Makarios Chung, Rachleff  
2019 Zhifei Shen, PURM  
2018–2019 AutoBar, senior design project  
2017–2018 Belay-On, senior design project

## Academic Service

Leadership Co-Organizer for 2-day Workshop *Learning for Integrated Task and Motion Planning*, AAAI Bridge Program, 2025  
(With Sarah Keren and Brian Williams)  
  
Co-Organizer for Full-Day Workshop *Differentiable Optimization at All Scales: Simulation, Estimation, Learning, and Control* at CoRL, 2024  
(with Frederike Dümbgen, Justin Carpentier, Quentin Le Lidec, Louis Montaut, and Bibit Bianchini)  
  
Co-Organizer for Two-Day Workshop on Learning for Integrating Task and Motion Planning, AAAI Bridge 2025  
(with Sarah Keren and Brian Williams)  
  
Local Arrangements Chair, ICRA 2022  
  
Co-Organizer for Full-Day Workshop *The Science of Bumping Into Things: Towards Robots That Aren't Afraid of Contact* at RSS, 2022  
(with Aaron Johnson and Hannah Stuart)  
  
Co-Organizer for Full-Day Workshop *Differentiable Simulation For Robotics* at RSS, 2022  
(with Kelsey Allen, Kevin Smith, and Andrew Spielberg)  
  
Co-organizer for Dynamic Walking Conference, 15th annual multi-day meeting, 2020  
Due to COVID-19, conference was changed to a one-day, 500 person virtual event  
(with Aaron Johnson)  
  
Co-organizer for Northeast Robotics Colloquium, 7th annual one-day meeting, 2019  
(with Cynthia Sung and Pratik Chaudhari)  
  
Co-organizer for Full-Day Workshop *Challenges in Dynamic Legged Locomotion: Design, Modeling, Estimation, and Control* at Robotics: Science and Systems Conference, 2017  
(with Diego Pardo and Scott Kuindersma)

Co-organizer for Full-Day Workshop *Frontiers in Contact-rich Robotic Interaction: Modeling, Optimization and Control Synthesis* at IROS, 2017  
(with Jiaji Zhou and Matt Mason)

Editorial Associate Editor, IEEE Transactions on Robotics (TRO), 2022–2024

Guest Editor, IEEE Transactions on Robotics Special Issue on Impact-Aware Robotics, 2022–2024

Associate Editor, IEEE Robotics and Automation Letters (RA-L), 2020–2022

Associate Editor, ICRA, 2020, 2021

Associate Editor, IROS, 2020

Associate Editor of workshop proposals, ICRA, 2018, 2019

Area Chair, Robotics: Science and Systems (RSS), 2022, 2023

Awards Committee, Robotics: Science and Systems (RSS), 2021

Program Committee, Workshop on the Algorithmic Foundations of Robotics (WAFR) 2020

Program Committee, Hybrid Systems: Computation and Control (HSCC), 2019

Journal Reviews International Journal of Robotics Research

IEEE Transactions on Robotics

Science Robotics

IEEE Transactions on Automatic Control

IEEE Transactions on Aerospace and Electronic Systems

Nonlinear Analysis: Hybrid Systems

Autonomous Robots

IEEE Robotics and Automation Letters

Automatica

The Journal of Optimization Theory and Applications

IEEE Transactions on Biomedical Engineering

Conference Reviews IEEE/RSJ International Conference on Intelligent Robots and Systems

IEEE International Conference on Robotics and Automation

Robotics: Science and Systems

IEEE Conference on Decision and Control

Conference on Robot Learning

Hybrid Systems: Computation and Control

IEEE Conference on Decision and Control

American Control Conference

The Workshop on the Algorithmic Foundations of Robotics

IEEE-RAS International Conference on Humanoid Robots  
Pacific Conference on Computer Graphics and Applications  
Grant Proposal National Science Foundation (NRI, CISE-RI, FRR, CAREER)  
Reviews  
Other RSS Pioneers Meta Review, 2022, 2023, 2024  
Hans Fisher Fellowship Review

## University Service

2025 GRASP Director Search Committee  
2025 Penn Prize for Excellence in Graduate Teaching Committee  
2023–2024 University of Pennsylvania, MEAM Faculty Search Committee  
2022–2023 University of Pennsylvania, MEAM Data Science and Machine Learning Search Committee  
2022 University of Pennsylvania, MEAM Lecturer Search Committee  
2020 University of Pennsylvania, MEAM Mechanical Systems & Design Subcommittee Chair  
2018–2021, 2024, University of Pennsylvania, MEAM PhD Admissions Committee  
2025  
2021 University of Pennsylvania, MEAM PhD Math Subcommittee  
2018, 2020 University of Pennsylvania, MEAM MSE Merit Scholarship Committee  
2015-2016 MIT, Faculty Search Student Committee  
2014-2015 MIT, Faculty Search Student Committee