

Haimin Hu

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EDUCATION

- **Princeton University** Princeton, NJ
Ph.D. in Electrical Engineering
Supervisor: Jaime F. Fisac
Aug. 2020 – Jun. 2025
- **University of Pennsylvania** Philadelphia, PA
M.S.E. in Electrical Engineering
Supervisors: George J. Pappas and Manfred Morari
Aug. 2018 – May 2020
- **ShanghaiTech University** Shanghai, China
B.E. in Electronic and Information Engineering
Supervisor: Boris Houska
Sep. 2014 – Jul. 2018
- **University of California, Berkeley** Berkeley, CA
Visiting student in Electrical Engineering and Computer Sciences
Supervisor: Claire J. Tomlin
Aug. 2017 – May 2018

Research Interests: Model predictive control, human-robot interaction, learning for control

PUBLICATIONS

- [1] **H. Hu**, K. Nakamura and J. F. Fisac, “SHARP: Shielding-aware robust planning for safe and efficient human-robot interaction,” Submitted to *IEEE Robotics and Automation Letters (RA-L)*, 2021.
- [2] M. Chen*, S. L. Herbert*, **H. Hu**, Y. Pu, J. F. Fisac, S. Bansal, S. Han, C. J. Tomlin, “FaSTrack: a modular framework for real-time motion planning and safe tracking”, *IEEE Transactions on Automatic Control*, 2021.
- [3] L. Lindemann, **H. Hu**, A. Robey, H. Zhang, D. V. Dimarogonas, S. Tu and N. Matni, “Learning Hybrid Control Barrier Functions from Data,” *4th Conference on Robot Learning (CoRL)*, 2020.
- [4] **H. Hu**, M. Fazlyab, M. Morari and G. J. Pappas, “Reach-SDP: Reachability analysis of closed-loop systems with neural network controllers via semidefinite programming,” *IEEE Conference on Decision and Control (CDC)*, 2020.
- [5] A. Robey*, **H. Hu***, L. Lindemann, H. Zhang, D. V. Dimarogonas, S. Tu and N. Matni, “Learning control barrier functions from expert demonstrations,” *IEEE Conference on Decision and Control (CDC)*, 2020.
- [6] **H. Hu**, K. Gatsis, M. Morari and G. J. Pappas, “Non-cooperative distributed MPC with iterative learning,” *21st IFAC World Congress*, 2020.
- [7] **H. Hu**, K. Gatsis, M. Morari and G. J. Pappas, “Tuning communication latency for distributed model predictive control,” *8th IFAC Workshop on Distributed Estimation and Control in Networked Systems (NecSys)*, 2019.
- [8] X. Feng, **H. Hu**, M. E. Villanueva, B. Houska, “Min-max differential inequalities for polytopic tube MPC,” *American Control Conference (ACC)*, 2019.
- [9] **H. Hu**, Y. Pu, M. Chen, C. J. Tomlin, “Plug and play distributed model predictive control for heavy duty vehicle platooning and interaction with passenger vehicles,” *57th IEEE Conference on Decision and Control (CDC)*, 2018.
- [10] **H. Hu**, X. Feng, R. Quirynen, M. E. Villanueva, B. Houska, “Real-time tube MPC applied to a 10-state quadrotor model,” *American Control Conference (ACC)*, 2018.

HONORS AND AWARDS

- **First Year Fellowship** Princeton University, 2020
- **Outstanding Research Award** University of Pennsylvania, 2020
- **Outstanding Graduate (Top 5%)** ShanghaiTech University, 2018
- **President’s Scholarship (Top 2%)** ShanghaiTech University, 2017
- **Merit Student for Excellence in Research** ShanghaiTech University, 2017

TEACHING

- **Assistant in Instruction (Solo):** ECE 539/COS 512 Safety-Critical Robotic Systems (Fall 2021), Princeton University, Instructor: Prof. Jaime F. Fisac
- **Teaching Assistant (Solo):** ESE 619 Model Predictive Control (Spring 2020), University of Pennsylvania, Instructor: Prof. Manfred Morari

PROFESSIONAL ACTIVITIES

- **Peer Reviewer:** IEEE Robotics and Automation Letters (RA-L), IEEE Transactions on Automatic Control (TAC), IEEE Conference on Decision and Control (CDC), American Control Conference (ACC), IFAC World Congress (IFAC WC), IFAC Workshop on Distributed Estimation and Control in Networked Systems (NecSys), IEEE International Conference on Robotics and Automation (ICRA), Optimal Control Applications and Methods

TECHNICAL SKILLS

- **Programming Languages:** C/C++, Python, MATLAB, Julia
- **Research Software:** YALMIP, ACADO, CVX, MPT3, Google Jax, CasADi, ROS, Simulink, L^AT_EX