

# Haimin Hu

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## EDUCATION

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- **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 (GPA: 4.0/4.0)*  
Supervisors: George J. Pappas and Manfred Morari  
Aug. 2018 – May 2020
- **ShanghaiTech University** Shanghai, China  
*B.E. in Electronic and Information Engineering (GPA: 3.69/4.0)*  
Supervisor: Boris Houska  
Sep. 2014 – Jul. 2018
- **University of California, Berkeley** Berkeley, CA  
*Visiting student in Electrical Engineering and Computer Sciences (GPA: 3.955/4.0)*  
Supervisor: Claire J. Tomlin  
Aug. 2017 – May 2018

**Research Interests:** Learning for control, model predictive control, multi-agent systems, human-centered robotics

## PUBLICATIONS

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- [1] **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.
- [2] 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.
- [3] 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*, 2020.
- [4] **H. Hu**, K. Gatsis, M. Morari and G. J. Pappas, “Non-cooperative distributed MPC with iterative learning,” *21st IFAC World Congress*, 2020.
- [5] **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.
- [6] X. Feng, **H. Hu**, M. E. Villanueva, B. Houska, “Min-max differential inequalities for polytopic tube MPC,” *American Control Conference (ACC)*, 2019.
- [7] **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.
- [8] **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

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- **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

## PROFESSIONAL ACTIVITIES

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- **Teaching Assistant:** ESE 619 Model Predictive Control (Spring 2020), Instructor: Prof. Manfred Morari
- **Peer Reviewer:** 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), Optimal Control Applications and Methods

## TECHNICAL SKILLS

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- **Programming Languages:** C/C++, Python, MATLAB, Julia
- **Research Software:** YALMIP, ACADO, CVX, MPT3, Google Jax, CasADi, ROS, Simulink, L<sup>A</sup>T<sub>E</sub>X