

SONGYUAN ZHANG

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Lab: REALM Lab, MIT Building 31, 70 Vassar St, Cambridge, MA 02139, U.S.

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RESEARCH INTERESTS

Safe Autonomous Systems, Machine Learning, Reinforcement Learning, Robotics, Control Theory

EDUCATION

Massachusetts Institute of Technology

Aug. 2021 - Now

Graduate Student at Department of Aeronautics and Astronautics *Advisor: Prof. Chuchu Fan*

Tsinghua University

Sep. 2017 - Jul. 2021

B.E. in Tsien Excellence in Engineering Program (honored degree)

Advisor: Prof. Yanan Sui, Prof. Hao Wu, Prof. Gangtie Zheng

Stanford University

Jun. 2020 - July. 2021

Remote Visiting Scholar in Computer Science

Advisor: Prof. Dorsa Sadigh

University of California, Berkeley

July. 2019 - Sept. 2019

Visiting Scholar in Mechanical Engineering

Advisor: Prof. Masayoshi Tomizuka

PUBLICATIONS

JOURNAL

[SG'23] Lizhi Wang, Songyuan Zhang, Yifan Zhou, Chuchu Fan, Peng Zhang, and Yacov A. Shamash. "Physics-Informed, Safety and Stability Certified Neural Control for Uncertain Networked Microgrids." *IEEE Transactions on Smart Grid*, 2023.[[PDF](#)]

CONFERENCE

[CoRL'23] Songyuan Zhang, Kunal Garg, and Chuchu Fan. "Neural Graph Control Barrier Functions Guided Distributed Collision-avoidance Multi-agent Control." *7th Conference on Robot Learning (CoRL)*, 2023.[[Website](#)]

[PESGM'23] Lizhi Wang, Songyuan Zhang, Yifan Zhou, Chuchu Fan, Peng Zhang, and Yacov A. Shamash. "Learning-Based, Safety and Stability-Certified Microgrid Control." *2023 IEEE Power & Energy Society General Meeting (PESGM)*, 2023.[[PDF](#)]

[L4DC'23 (ORAL)] Songyuan Zhang, Yumeng Xiu, Guannan Qu, and Chuchu Fan. "Compositional Neural Certificates for Networked Dynamical Systems." *5th Annual Learning for Dynamics & Control Conference (L4DC)*, 2023.[[Website](#)]

[NeurIPS'21] Songyuan Zhang*, Zhangjie Cao*, Dorsa Sadigh, and Yanan Sui. "Confidence-Aware Imitation Learning from Demonstrations with Varying Optimality." *Conference on Neural Information Processing Systems*, 2021.[[Website](#)]

HONORS AND AWARDS

Outstanding Graduate of Tsinghua University	2021
Outstanding Graduate of Beijing	2021
Outstanding Graduate of Scientific Research at TEEP	2021
Outstanding Graduate of Creativity at TEEP	2021
Honor Degree of Tsien Class, Tsinghua University	2021
Tsinghua Scholarship for Technological Innovation	2020
National Scholarship, China	2019
First Prize in Excellent Student Research Training Contest of Tsinghua University	2019
First Prize in "Challenge Cup" Science and Technology Competition of Tsinghua University	2019

ACADEMIC SERVICES

Teaching Assistant at Tsinghua University: X-idea (2021 Spring)

LEADERSHIP & MEMBERSHIP

Chairman of 13th *Spark* Innovative Talents Training Program at Tsinghua University
Vice-monitor of Tsien Class 2017
Member of the Second Team of Middle and Long Distance Running at Tsinghua University

HOBBIES

Photography, Badminton, Running, Skiing, Piano, Drum kit, Taekwondo, Poker Magic