Qinshuang Wei

Contact Information

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Academic Employment

The University of Texas at Austin	Austin, TX
Postdoctoral Fellow	June 2022 - Present
(Supervisor: Prof. Ufuk Topcu)	

Education

Georgia Institute of Technology	Atlanta, GA
• Ph.D. in Electrical Engineering.	Jan. 2019 – May 2022
(Advisor: Prof. Samuel Coogan)	
• Master of Science in Electrical Engineering.	Aug. 2017 - Dec. 2018
• Bachelor of Science in Electrical Engineering.	Aug. 2013 - May 2017
• Bachelor of Science in Applied Mathematics.	Aug. 2013 - May 2017

Research Interests

Modeling, control and analysis of cyber-physical systems, especially with applications in transportation networks.

Publications

Journal Publications

1. **Q. Wei**, R. Pedarsani, and S. Coogan, "Mixed Autonomy in Ride-Sharing Networks," *IEEE Transactions on Control of Network Systems*, vol. 7, no. 4, pp. 1940–1950, 2020.

Conference Publications

1. **Q. Wei**, J. A. Rodriguez, R. Pedarsani, and S. Coogan, "Ride-Sharing Networks with Mixed Autonomy," in *American Control Conference*, 2019.

2. **Q. Wei**, G. Nilsson, and S. Coogan, "Scheduling of Urban Air Mobility Services with Limited Landing Capacity and Uncertain Travel Times," in *2021 American Control Conference*, 2021.

3. **Q. Wei**, G. Nilsson, and S. Coogan. "Safety verification for urban air mobility scheduling." IFAC-PapersOnLine 55.13 (2022): 306-311.

In Preparation/Under Review

1. **Q. Wei**, Y. Yu, and U. Topcu, "Dynamic Routing in Stochastic Urban Air Mobility Networks: A Markov Decision Process Approach". (Accepted by IFAC World Congress 2023).

2. **Q. Wei**, G. Nilsson, and S. Coogan, "Safety Verification for UAV Scheduling". (In submission to *IEEE Transactions on Control of Network Systems*).

3. **Q. Wei**, G. Nilsson, and S. Coogan, "Capacity-Constrained Urban Air Mobility Scheduling". (In submission to Transportation Research Part C).

Thesis	**Modeling and Control of Networked Autonomous Systems** Committee Chair: Prof. Samuel Coogan	
Organizing Experience	**Autonomous Aerial Cargo Operations at Scale CONOPS Roundtable**	Charleston, WV Feb. 2023
	Moderator, Note-taker	
	2021 DCL Student Symposium	Georgia Institute of Technology
	Technical Team Leader	April 2021
	2021 Southeast Controls Conference	Blacksburg, VA
	Technical Program Co-Chair	Nov. 2021
Teaching Experience	**Georgia Institute of Technology**	
	Introduction to Automation and Robotics - Teaching Assistant	
	Statistics and Applications - Teaching Assistant	
	Circuit Analysis - Teaching Assistant	
	Introduction to Linear Algebra for Calculus - Grader	
Review Activity	Journals: IEEE Transactions on Intelligent Transportation Systems, Transportation Research Part C.	
	Conferences: American Control Conference (ACC), IEEE Conference on Decision and Control (CDC).	
Seminars/ Talks	**Safe Schedule Verification for Urban Air Mobility Networks with Node Closures** *NASA ULI Project Review Board*	The University of Texas at Austin Aug. 2022
	Safe Schedule Verification for Urban Air Mobility Networks with Node Closures *Postdoctoral Talk*	The University of Texas at Austin April 2022
	Modeling and Control of Networked Autonomous Systems *Ph.D. Dissertation Defense*	Georgia Institute of Technology April 2022

Scheduling of Urban Air Mobility Services with Limited Landing Capacity and Uncertain Travel Times *American Control Conference 2021*	Virtual May 2021	
Modeling and Control of Networked Autonomous Systems *Ph.D. Proposal Defense*	Georgia Institute of Technology Aug. 2021	
Ride-Sharing Networks with Mixed Autonomy *American Control Conference 2019*	Philadelphia, PA July 2019	

Language and Skills

Languages: **Chinese** (native), **English** (proficient)

Programming languages: Matlab, Python, C, Java, Latex

Volunteer Activities

Volunteer for Code2College
- Edit resume, essay for high-school students
- Participate in mock interviews for college students.

Volunteer for Women in STEM
- Mentor girls who wish to pursue STEM majors in the future.

Volunteer for Girlstart
- Participate in STEM related activities for children, especially for girls.

Volunteer for Texas Advanced Computing Center
- Participate in lab visits for local high-school students.
- Instruct code-related robotic activities.

References

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Georgia Institute of Technology
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