Yijun Chen

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Education

University of Sydney (USYD) — Sydney, Australia
Ph. D. in Control System Engineering, Supervised by Guodong Shi — Oct. 2019 - September. 2023 (Expected)
Beijing University of Posts and Telecommunications (BUPT) — Beijing, China
B. Eng. in Digital Media Technology (score: 89/100, ranking: 1/60), Advised by Rongfeng Li — Sep. 2015 - July. 2019

Research Interests

My research interests are mainly about learning, decision making, optimization and control in multi-agent systems. The specific problems I have worked on so far are as follows:

- price shaping problem (to guarantee unit resource price under a threshold),

- network structure inference (to learn the underlying network structure given public behavioral data),

- differentially private games (to protect the privacy of payoff functions in information aggregation processes),

- cooperation and non-cooperation under Dynamic/Regional Integrated Climate Economy framework (to provide insights for regional climate policies from the perspective of game theory and optimal control).

Publications

Journal Articles

- **Yijun Chen**, Razibul Islam, Elizabeth L. Ratnam, Ian R. Petersen, and Guodong Shi. "Competitive Equilibriums and Social Shaping for Multi-Agent Systems ." Automatica, 2022.

Conference Papers

- **Yijun Chen** and Guodong Shi, "Dynamic Game for Regional Climate Mitigation Control." Accepted by the 22nd World Congress of the International Federation of Automatic Control, 2023

- **Yijun Chen** and Guodong Shi, "Differentially Private Games via Payoff Perturbation." Accepted by the American Control Conference, 2023.

- **Yijun Chen**, Kemi Ding, and Guodong Shi, "Network Learning from Best-Response Dynamics in LQ Games." Accepted by the American Control Conference, 2023.

- **Yijun Chen**, Razibul Islam, Elizabeth L. Ratnam, Ian R. Petersen, and Guodong Shi. "Social Shaping of Competitive Equilibriums for Resilient Multi-agent Systems." In the 60th IEEE Conference on Decision and Control, 2021.

- Zeinab Salehi, **Yijun Chen**, Elizabeth L. Ratnam, Ian R. Petersen, and Guodong Shi. "Social Shaping of Dynamic Multi-Agent Systems Over a Finite Horizon", In the 61st IEEE Conference on Decision and Control, 2022.

- Zeinab Salehi, **Yijun Chen**, Elizabeth L. Ratnam, Ian R. Petersen, and Guodong Shi. "Social Shaping of Linear Quadratic Multi-Agent Systems." In the 5th Australian & New Zealand Control Conference, 2021. (Best Student Paper)

Preprints Under Journal Review

- **Yijun Chen** and Guodong Shi, "How Cooperation and Competition Arise in Regional Climate Policies: RICE as a Dynamic Game." Submitted to IEEE Transactions on Control Systems Technology, 2023.

- Zeinab Salehi, **Yijun Chen**, Ian R. Petersen, Elizabeth L. Ratnam, and Guodong Shi. "Competitive Equilibrium for Dynamic Multi-Agent Systems: Social Shaping and Price Trajectories." Under revision for IEEE Transactions on Automatic Control, 2022.

- Kemi Ding, **Yijun Chen**, Lei Wang, Xiaoqiang Ren, and Guodong Shi, "Network Learning in Quadratic Games from Best-Response Dynamics." Submitted to IEEE/ACM Transactions on Networking, 2023.

- Yan Leng, **Yijun Chen**, Xiaowen Dong, Junfeng Wu, and Guodong Shi. "Can Social Connections Be Protected When Behavioral Data is Public?" Submitted to Management Information Systems Quarterly, 2022.

- Zeinab Salehi, **Yijun Chen**, Ian R. Petersen, Elizabeth L. Ratnam, and Guodong Shi. "Social Shaping for Transactive Energy Systems." Submitted to IEEE Transactions on Energy Markets, Policy and Regulation, 2022.

HONORS AND AWARDS

Diversity and Inclusion Travel Support for IFAC World Congress	2023
Student Travel Grant for American Control Conference	2023
Faculty of Engineering Career Advancement Award, USYD	2023
Best Student Paper for Australian-New Zealand Control Conference	2021
Engineering and Information Technologies Research Scholarship, USYD	2019 - 2023
First Prize Scholarship for Academic Outstanding (Less than 0.5%), BUPT	2016 - 2019
Merit Student (Less than 1%), BUPT	2016 - 2019

TEACHING EXPERIENCE

Teaching Assistant (Tutorials & Labs)	2020 - 2023
AMME3500/8501/9501: System Dynamics and Control, USYD, Australia.	
One of Instructors	2021
Introduction to Network Science, Swarma Campus, China.	

INVITED TALKS

Presenter, IFAC World Congress	2023
Papers: Dynamic Game for Regional Climate Mitigation Control	
Co-chair, The American Control Conference	2023
Session WeC10: Agents-based Systems III	
Presenter, The American Control Conference	2023
Papers: Network Learning from Best-Response Dynamics in LQ Games; Differentially Private Games Via Payoff Perturbation	
Presenter, The Conference on Decision and Control	2022
Paper: Social Shaping of Dynamic Multi-Agent Systems Over a Finite Horizon	
Presenter, The Conference on Decision and Control	2021
Paper: Social Shaping of Competitive Equilibriums for Resilient Multi-agent Systems	

ACADEMIC SERVICES

Reviewer of IEEE Control Systems Letters, IEEE Transaction on Automatic Control, IEEE Conference on Decision and Control, and American Control Conference

SKILLS

Programming: Python, Matlab, Julia
Hobbies: Brazilian jiu-jitsu, Badminton, Tennis