

CHENGRUI QU

+1-626-648-7283 | qcr2021@stu.pku.edu.cn | crqu.github.io

5 Yiheyuan Rd, Haidian District, Beijing, China, 100871

RESEARCH INTERESTS

Theoretical Foundations of Reinforcement Learning
Learning and Control in Multi-agent Systems
Mechanism design to promote Sustainability

EDUCATION

- **California Institute of Technology** Jun. 2024 - Sep. 2024
Summer Undergraduate Research Fellowships (SURF) Pasadena, CA, USA
◦ Advisor: Adam Wierman
- **Peking University** Sep. 2021 - Jun. 2025 (expected)
Major: Theoretical and Applied Mechanics Beijing, China
◦ GPA: 3.894/4.0 Average Score: 92.5/100 Rank: 1/39

PUBLICATIONS & PREPRINTS

- **C. Qu, L. Shi, K. Panaganti, P. You, and A. Wierman.** Hybrid Transfer Reinforcement Learning: Provable Sample Efficiency from Shifted-dynamics Data, 2024 (in submission to AISTATS 2025)
- **K. Mukhi, C. Qu, P. You, and A. Abate.** [Distributionally Robust Aggregation of Electric Vehicle Flexibility](#), 2024 (in submission, won **Best Poster Award** in DTU PES Summer School 2024)

RESEARCH EXPERIENCES

- **Hybrid Transfer Reinforcement Learning: Provable Sample Efficiency From Shifted-dynamics Data** 2024
Instructor: Laixi Shi, Kishan Panaganti Badrinath; *Advisor:* Adam Wierman
◦ Propose a novel RL setting for finite-sample analysis in practical hybrid transfer problems
◦ Establish a minimax lower bound on sample complexity in this setting
◦ Design an algorithm that provably achieves better sample efficiency than state-of-the-art pure online RL
- **Distributionally Robust Online Pricing with Price-aware Demand** 2024
Advisor: Pengcheng You
◦ Study optimal pricing under price-aware, time-coupled stochastic demand
◦ Develop tractable data-driven distributionally optimization methods for practical applications
- **Data-driven Distributionally Robust Aggregation of Electric Vehicle Flexibility** 2024
Collaborator: Karan Mukhi, *Advisor:* Pengcheng You
◦ Study optimal control for electric vehicle charging under high-dimensional stochastic demand
◦ Develop distributionally robust methods to characterize the aggregate feasible set
◦ Design practical algorithms to compute the feasible set for downstream applications

HONORS AND AWARDS

- **Huatai Securities Technology Scholarship** 2024
- **NSFC 1st Youth Student Basic Research Grant** 2023
- **National Scholarship (Top undergraduate student award)** 2023
- **Pacemaker to Merit Student, Peking University** 2023
- **The First Prize in 14th National Zhou Peiyuan Mechanics Competition (Top 0.3%)** 2023
- **Merit Student, Peking University** 2022
- **The First Prize in 37th Chinese Physics Olympiad (Jiangsu Province)** 2020
- **The First Prize in 34th Chinese Chemistry Olympiad (Jiangsu Province)** 2020
- **The First Prize in 36th Chinese Maths Olympiad (Jiangsu Province)** 2020

TEACHING EXPERIENCES

- **Principle of Economics** Spring 2024
TA, National School of Development, Peking University
- **International Trade** Spring 2024
TA, National School of Development, Peking University

INVITED TALKS

- **Hybrid Transfer Reinforcement Learning: Provable Sample Efficiency From Shifted-dynamics Data** Sep. 2024
ORSC Data Science 2024, Beijing
- **Distributionally Robust Aggregation of Electric Vehicle Flexibility** Mar. 2024
School of Data Science, The Chinese University of Hong Kong, Shenzhen

ADDITIONAL INFORMATION

Programming Skills: C++, Python, MATLAB, CUDA, Shell

Leadership: President of the Jiangsu Cultural Association, Peking University

REFERENCES

1. **Adam Wierman**

Carl F Braun Professor, Department of Computing and Mathematical Sciences
California Institute of Technology
Email: adamw@caltech.edu

2. **Pengcheng You**

Assistant Professor, Department of Industrial Engineering and Management
Peking University
Email: pcyou@pku.edu.cn