Xinxiang **Guo**

Ph.D. Student in Systems Theory · Researcher in Game Theory and Optimization

Haidian District, Beijing, China

+86 152 6352 4208 | guoxinxiang@amss.ac.cn | xinxiang-guo.github.io/ | Xinxiang Guo

Education

University of Chinese Academy of Sciences — *Sep 2023 – Jun 2026*

Ph.D. in Systems Theory, Mathematics, advised by Prof. Yifen Mu — *Beijing*

National University of Singapore — *Jul 2025 – Jan 2026*

Exchange Research Student in Economics, visiting Prof. Yingkai Li — *Singapore*

University of Chinese Academy of Sciences — *Sep 2020 – Jun 2023*

M.S. in Computational Mathematics, Mathematics, advised by Prof. Yifen Mu — *Beijing*

Jilin University — *Sep 2016 – Jun 2020*

B.S. in Information and Computing Science, Mathematics, advised by Prof. Rui Wang — *Changchun, Jilin*

Interests

My research interests lie at the intersection of algorithmic game theory, optimization, and reinforcement learning, with a unifying focus on advancing intelligent decision-making—an area driving my deep academic passion.

I analyze the evolutionary behavior of heterogeneous agents in repeated games and investigate the efficiency of heterogeneous learning in computing equilibria. I am also interested in the problem of algorithmic exploitation in repeated games and practical applications of mean-field game theory.

Publications

- **Guo X**, Mu Y, Yang X. Periodicity in hedge-myopic system and an asymmetric NE-solving paradigm for two-player zero-sum games. *Dynamic Games and Applications*, 2025
- **Guo X**, Mu Y, Yang X. Periodicity in dynamical games driven by Hedge and myopic best response. *CDC 2024*
- **Guo X**, Mu Y. Regularized minimax-V learning in markov games. *FAW 2025*
- **Guo X**, Mu Y. Taking myopic best response against Hedge. *CCC 2023*
- **Guo X**, Mu Y. DTHBR: An asymmetric NE-solving paradigm. *CCC 2025*
- **Guo X**, Mu Y. Optimal strategy against Hedge. *arXiv:2312.09472*, 2023.
- **Guo X**, Zhang J et al. Last-iterate convergence via alternating dynamics. *NeurIPS 2025* (Submitted)
- Zhang J, **Guo X** (Co-first Author) et al. Heterogeneous learning in time-varying games. *AAAI 2026* (Submitted)

Conferences

- IEEE CDC 2024, Milano, Dec 2024
- GAMES 2024, Beijing, Aug 2024
- ICM 2022 ”Game Theory and Applications”, Online, Aug 2022
- Chinese Control Conference 2025, 2024, 2023, 2022

Honors & Awards

- UCAS Outstanding Student: 2021, 2023, 2025
- National Scholarship for Master Students: Sep 2022