Qirui Mi

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𝔗 https://miracle1207.github.io/miqirui.github.io/ in Qirui Mi 𝔅 Miracle1207

Research Interests

 $\label{eq:AI:Reinforcement Learning (RL) agents, Large Language Model (LLM) agents, Multi-Agent Systems, Population-agent system, Game Theory.$

AI for Economics: Agent-based modeling, Economic simulations, and Social simulations.

Education

| Institute of Automation, Chinese Academy of Sciences, Beijing, China PhD Student in Pattern Recognition and Intelligent Systems Advisors: Prof. Jun Wang, Prof. Haifeng Zhang | Aug 2021 – Present |
|---|--------------------|
| Nanyang Technological University, Singapore Visiting PhD Student in Computer Science | Oct 2024 – Present |
| Publications | |
| EconGym: A Scalable AI Testbed with Diverse Economic Tasks Qirui Mi, Qipeng Yang, Zijun Fan, Wentian Fan, Heyang Ma, Chengdong Ma, Siyu Xia, Bo An, Jun Wang, Haifeng Zhang | June 2025 |
| MF-LLM: Simulating Population Decision Dynamics via a Mean-Field Large Language Model Framework Qirui Mi, Mengyue Yang, Xiangning Yu, Zhiyu Zhao, Cheng Deng, Bo An, Haifeng Zhang, Xu Chen, Jun Wang Submitted to NeurIPS 2025. arXiv:2504.21582 | Apr 2025 |
| Learning Macroeconomic Policies through Dynamic Stackelberg Mean- Field Games Qirui Mi, Zhiyu Zhao, Chengdong Ma, Siyu Xia, Yan Song,Mengyue Yang, Jun Wang, Haifeng Zhang Submitted to ECAI 2025. arXiv:2403.12093 ☑ | Apr 2025 |
| Mean Field Correlated Imitation Learning Zhiyu Zhao, Chengdong Ma, Qirui Mi, Ning Yang, Xue Yan, Mengyue Yang, Haifeng Zhang Jun Wang, Yaodong Yang AAMAS 2025. | Apr 2024 g, |
| Large Language Models Play StarCraft II: Benchmarks and a Chain of Summarization Approach Weiyu Ma, Qirui Mi, Yongcheng Zeng, Xue Yan, Runji Lin, Yuqiao Wu, Jun Wang, Haifeng Zhang NeurIPS 2024. | Dec 2024 |
| TaxAI: A Dynamic Economic Simulator and Benchmark for Multi-Agent Reinforcement Learning Qirui Mi, Siyu Xia, Yan Song, Haifeng Zhang, Shenghao Zhu, Jun Wang AAMAS 2024. | Sept 2023 |
| Joint Caching and Transmission in the Mobile Edge Network: A Multi- Agent Learning Approach Qirui Mi, Ning Yang, Haifeng Zhang, Haijun Zhang, Jun Wang IEEE GLOBECOM 2021. | Dec 2021 |

Talks

 $\mathbf{2025}$ Organizing and presenting the AAMAS 2025 Computational Economic Competition. AAMAS 2025, Detroit, USA.

2025 Mean Field Correlated Imitation Learning. Oral presentation at AAMAS 2025, Detroit, USA.

2025 Game-Theoretic Agents for Economic and Social Governance. *Dadao Forum*, Shandong Institute of Business and Technology.

2024 Game-Theoretic Agents for Economic Problems. Invited talks at *Shanghai Jiao Tong University* (JHC Lecture Series) and *Fudan University*.

2024 TaxAI: A Dynamic Economic Simulator and Benchmark for Multi-Agent Reinforcement Learning. Invited talk at *DAI 2024*, Singapore.

2024 TaxAI: A Dynamic Economic Simulator and Benchmark for Multi-Agent Reinforcement Learning. Oral presentation at *AAMAS 2024*, Auckland.

Services

Main organizer of the AAMAS 2025 Computational Economics Competition: Optimal Tax Policy with Heterogeneous Agent Models. Website 🗹 Main organizer of the AAMAS 2024 Computational Economics Competition: Optimal Tax Policy. Website 🗹 Main organizer of the CCF Computational Economics Competition. Website 🗹 Reviewers: Neurips, AAAI, ICLR, AAMAS, ICML, IJCAI.

Honors

| Outstanding Student Leader | 2024 |
|---|------|
| Outstanding Merit Student | 2023 |
| Outstanding Graduate of Beijing Colleges and Universities | 2021 |
| Outstanding Undergraduate Thesis of Beijing Colleges and Universities | 2021 |
| Meritorious Winner, MCM (USA) | 2019 |
| Second Prize, 10th 'Challenge Cup' for Beijing College Students | 2019 |