Yuming Chen

Email: yuming.g.chen@gmail.com   **Tel:** +44 (0)7827167851

EDUCATION BACKGROUND

University of Birmingham, Birmingham, U.K.   *Sept. 2023 - Jun. 2024*
Project: MSc. AI & ML   **School:** School of Engineering and Physical Sciences **Overall GPA:** 73.6 /100 (Distinct)
Dissertation: Multi-Hypothesis 3D Hand Mesh Sequence Estimation from Blurry Image

University of Chinese Academy of Social Sciences, Beijing, China   *Sept. 2017 - Jun. 2022*
Major: Economics   **School:** School of Economics   **Overall GPA:** 3.59 /4.0
Thesis: Approximability of Equilibria in Pure Exchange Economy with Atomic Traders

RESEARCH EXPERIENCES

Research Internship   *Mar. 2022 - Jul.2023*
Deep Reinforcement Learning Research Group, the State Key Laboratory for Management and Control of Complex Systems, Institute of Automation, Chinese Academy of Sciences.

- ❖ Designed an algorithm learning to represent opponent's policy in Multi-Agent System (MAS) via contrastive learning. Decentralized agents with such a module reached the equilibria with higher social welfare in social dilemmas, such as Iterated Prisoner's Dilemma (IPD). It is accepted by 2023 International Conference on Neural Information Processing (ICONIP2023).

- ❖ Design an algorithm for UAV controlling. The UAV was totally controlled with hierarchical Reinforcement Learning Policy. I used reward shaping to address the reward hacking problem, and reward randomization to learn diversified policies.

Research Internship   *Feb. 2024 - Nov.2024*
Intelligent Robotics Lab, the University of Birmingham

- ❖ Developed a generative 3D hand pose estimation model from a blurry image. To address the multi-hypothesis issue, the model generates multiple plausible candidates and selects the best via a trained reward model. It has been submitted to ICME2025.

Research Interests

- ❖ **Human Pose Estimation:**
  - 3D Motion prediction
  - Unsupervised /Self-supervised learning
- ❖ **Reinforcement Learning:**
  - Human-AI collaboration
  - Preference learning (including RLHF)

Publications

"Multi-Hypothesis 3D Hand Mesh Recovering from a Single Blurry Image"
Submitted to the International Conference on Multimedia & Expo (ICME2025).

"Policy Representation Opponent Shaping via Contrastive Learning"
Accepted by the International Conference on Neural Information Processing (ICONIP2023).

"Research on Duopoly Non-cooperative Game Model under the Conditions of Supply Surplus"
Published in Contemporary Economic Research (indexed by CSSCI) in Jul. 2021 [Link (in Chinese)]