

Yuming Chen

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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 is submitted to ICME2025.

Research Interests

- ❖ **Reinforcement Learning:**
 - Human-AI collaboration
 - Vision-based Learning
 - Imitation Learning / Preference Learning
- ❖ **Multi-Agent System & Game Theory:**
 - Opponent Modelling & Reasoning
 - Game Dynamics Analysis (inc. Decomposition of games)

Publications

"Multi-Hypothesis 3D Hand Mesh Recovering from a Single Blurry Image"

Submitted to the International Conference on Multimedia & Expo (ICME2025).

Yuming C., Yuanheng, Z. *"Policy Representation Opponent Shaping via Contrastive Learning"*

Accepted by the International Conference on Neural Information Processing (ICONIP2023).

Dapei Z., Ying K., Yuming C. *"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 \(in Chinese\)](#)]