

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: Research on 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 a module to represent opponent's policy in Multi-Agent System (MAS) via contrastive learning. 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).
- ❖ Assisted to design an algorithm for decentralized rescue drones to collaborate with each other. Such drones were totally controlled via Reinforcement Learning. I used reward shaping to avoid shifting from the original high-level goal, 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 WACV2025.

Research Interests

- ❖ **Reinforcement Learning:**
 - Human-AI collaboration
 - Imitation Learning
 - Preference Learning
- ❖ **Multi-Agent System & Game Theory:**
 - Opponent Modelling & Reasoning
 - Game Dynamics Analysis

Publications

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

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

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 \(in Chinese\)](#)]