

# 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 \(in Chinese\)](#)]