

Yongshan Chen

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EDUCATION

Shanghai Jiao Tong University

Bachelor of Computer Science (Honors)

Shanghai, China

Sept. 2021 - Present

- Member of ACM Honors Class, which is an elite CS program for top 5% talented students
- **Avg. GPA (4.0 for A)** (All): 3.78
- **Avg. GPA** (Grade 3): 4.05
- Scores of some courses:
 - * Principle and Practice of Computer Algorithms: A^+
 - * Compiler Design and Implementation: A^+
 - * Algorithm Design and Analysis: A^+
 - * Deep Learning and Its Applications: A^+
 - * Introduction to Data Science: A^+
 - * Large Language Models: A^+

EXPERIENCE

Shanghai Jiao Tong University: Apex Lab

Undergraduate Researcher, advised by Prof. Weinan Zhang

Research Topic: Multi-Agent Reinforcement Learning

Shanghai, China

July. 2023 - Present

University of Maryland

Intern, advised by Prof. Kaiqing Zhang

Research Topic: Game Theory and Large Language Model

Maryland, United States

July. 2024 - December. 2024

The Fifth International Distributed AI Conference (DAI2023)

Nanyang Technological University

Poster presentation: *A Deep Q-Network Algorithm with Two-Level Neural Network in Real-Time Strategy Games.*

Singapore

31.11.2023 - 3.12.2023

WORKS & PROJECTS

Learning in Games with Ranking Feedback

Mingyang Liu, Yongshan Chen, Zhiyuan Fan, Gabriele Farina, Asu Ozdaglar, Kaiqing Zhang

This research tackled a specialized case of the multi-arm bandit problem, where the player receives only a ranking of the k -selected actions at each timestep based on their current or average rewards. We derived hardness results for both single-step and average reward cases, proposed algorithms for these scenarios, and proved that under certain constraints on the utility vector's overall change, our method achieves time-average no regret.

Portable Language Model with Social Techniques (In progress)

Yongshan Chen, Ziyang Chen, Jinghan Wang, Kaiqing Zhang

A program focus on aligning llm's social ability with human and developing portable social models.

A Deep Q-Network Algorithm with Two-Level Neural Network in Real-Time Strategy Games

SJTU ACM Class Machine Learning 2023 Assignment (CS420 Course Project)

An improvement on traditional DQN algorithm to improve battle micro-control performance while reducing training expenses.

Also as a received poster of The Fifth International Distributed Artificial Intelligence Conference (DAI2023).

Mutual Theory of Mind in Human-AI Collaboration: An Empirical Study with LLM-driven AI Agents in a Real-time Shared Workspace Task

Shao Zhang, Xihuai Wang, Wenhao Zhang, Yongshan Chen, Landi Gao, Dakuo Wang, Weinan Zhang, Xinbing Wang, Ying Wen

Conducted a mixed-design experiment using a large language model-driven AI agent with ToM and communication modules in a real-time shared-workspace task To explore the mutual theory of mind(MToM) process.

RISC-V CPU Implemented in Verilog RTL

SJTU ACM Class Computer Architecture 2022 Assignment (MS108 Course Project)

A Tomasulo RISCV-V cpu with i-cache and 512 local biomodal branch predictors.

Compiler for Mx* Language

SJTU ACM Class Compiler Design and Implementation 2022 Assignment (MS208 Course Project)

A compiler in Java for Mx* language (which is a C++ and Java like language). From front end to redesigned LLVM IR to back end. With optimization algorithms including graph coloring, mem2reg and localization, my design reached **top** performance in ACM class 2021.

HONORS & AWARDS

Scholarship

- 2021, 2022, 2023, 2024 Zhiyuan Honorary Scholarship (Top **2%** in Shanghai Jiao Tong University).

OTHER EXPERIENCE

The Great Ideas in Computer Science

Teaching Assistant

Sept. 2022 - Feb. 2023

Principle and Practice of Computer Algorithms

Teaching Assistant

Jun. 2023 – Sept 2023