## Shuze Chen

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#### EDUCATION

### Shanghai Jiao Tong University

Shanghai, China

Undergraduate in Computer Science

Sep. 2021 - present

- o GPA: 4.1/4.3, Ranking: 1/17
- Member of JOHN Honors Class, an elite CS program at SJTU for top 5% of students, with a focus on Theoretical Computer Science.

#### RESEARCH INTERESTS

Reinforcement Learning, Online Learning, Operations Research and Experimentation.

#### Research Experience

#### John Hopcroft Center, Shanghai Jiao Tong University

Shanghai, China

Research Intern, Advisor: Prof. Shuai Li

July 2023 - Present

- o Topic: Online Learning and Algorithmic Game Theory
- \* We study imperfect-information extensive-form games (IIEFGs) with linear function approximation, particularly two-player zero-sum games where finding the Nash equilibrium (NE) can be converted to the regret minimization in online learning. We present provably efficient algorithms for fast convergence to NE in large-scale IIEFGs.

### Apex Data&Knowledge Management Lab, Shanghai Jiao Tong University

Shanghai, China

Research Intern, Advisor: Prof. Weinan Zhang

Oct. 2022 - July 2023

- o Topic: Deep Reinforcement Learning
- \* An implementation of state-of-the-art deep reinforcement learning algorithms with pure Jax.
- \* We propose REWARD CACHE, a solution that enhances the exploration capabilities of deep reinforcement learning algorithms, particularly for goal-conditioned tasks.

#### Preprints

1. Towards provably efficient learning of extensive-form games with imperfect information and linear function approximation

with Canzhe Zhao, Shuai Li et al.

In Submission.

#### Academic Projects

- JaxRL: A pure Jax implementation of state-of-the-art deep reinforcement learning algorithms like PPO, TD3, SAC, DQN etc.
  - Integrate Just-in-Time Compilation and pure function to accelerate training for deep reinforcement learning.
  - o Benchmark on popular deep reinforcement learning environments like Openai Gym, Mujoco and Minigrid.
- SEAL Compiler: Engineer a compiler from scratch for a C-like programming language SEAL.
  - Complete implementation of a modern compiler, from lexer and parser to assembly code generator that runs on Qemu RISC-V Simulater.
  - Optimizations implemented like tree-based register allocation and constant folding etc.

#### ACADEMIC ACTIVITIES

### SJTU-THU-PKU international computer science summer school

Shanghai, China

An international summer school focusing on cutting-edge topics in AI and cryptography.

July 2023

# Honors and Awards

• National Scholarship of China (Top 0.2% nationwide)	2021-2022
• Fan Hsu-Chi Scholarship (15 winners each year, Shanghai Jiao Tong University)	2022-2023
• Han-Ying-Ju-Hua Scholarship (15 winners each year, Shanghai Jiao Tong University)	2022-2023
• Zhiyuan Honorary Scholarship (Top 5%, , Shanghai Jiao Tong University)	2021-2022, 2022-2023
• A-class Academic Excellence Scholarship, Shanghai Jiao Tong University	2021-2022

# SKILLS SUMMARY

• Programming Languages: C/C++, Python, scheme

• Frameworks: Pytorch, Jax