

Kaiyuan Liu

📍 Seattle 📩 lky04@cs.washington.edu 🌐 kaiyuanliu04.github.io 📚 Scholar 💬 Kaiyuan Liu

Education

B.S. University of Washington, Seattle Double Major: Computer Science, Mathematics	2022 ~2026
• GPA: 3.9/4.0; Honor Math Sequence; Deans List	

Experience

Social RL Lab , Research Assistant	Seattle, WA 2024.09 ~Present
• Working on various projects related to multi-agent, reinforcement learning, and large language models.	
• Mentored by Dr. Natasha Jaques.	
Allen Institute , Research Assistant	Seattle, WA 2024.09 ~2025.05
• Applied Deep Learning and Reinforcement Learning to analyze representations from artificial models and neural data from Multi-Armed Bandit mouse foraging tasks. Explored brain representations and dynamics in decision making	
VecML , Machine Learning Engineer	Seattle, WA 2024.06 ~2024.09
• VecML is a startup company focusing on Machine Learning System Infrastructure.	
• Tested and developed vector databases for Retrieval-Augmented Generation.	
• Designed and implemented an Memory-Disk Hybrid Architecture for fast Top-K Nearest Neighborhood Search	
University of Washington , Teaching Assistant	Seattle, WA 2023 ~2024
• Assisted in undergraduate algorithm courses for both major (CSE 421) and non-major (CSE 417) students.	
• Served as leading TA in CSE 421 2024 Winter.	

Awards

ICPC World Final Honor , ICPC Foundation	2024.09
Shenoy Undergraduate Research Fellowship , Simons Foundation	2024 ~2025
ICPC North American Championship 12th Place , ICPC Foundation	2024.05
UW Winter Programming Contest Champion , University of Washington	2023 ~2024
CSE Award for Excellence Scholarship , University of Washington	2024 ~2025

Publications

LiveCodeBench Pro: How Do Olympiad Medalists Judge LLMs in Competitive Programming?	2025.05
Zihan Zheng*, Zerui Cheng*, Zeyu Shen*, Shang Zhou*, Kaiyuan Liu* , et al. *Equal contribution	
<i>The Thirty-Ninth Annual Conference on Neural Information Processing Systems (NeurIPS 2025)</i>	
arxiv.org/abs/2506.11928	
Evaluating LLM Agents as Human Simulators in Climate Social Dilemmas	
Kaiyuan Liu *, Xiaoxuan Hou*, Jiayi Yuan, Natasha Jaques *Equal contribution	

Under review

AutoCode: LLMs as Problem Setters for Competitive Programming

Shang Zhou*, Zihan Zheng*, **Kaiyuan Liu***, et al. *Equal contribution

arxiv.org/abs/2510.12803 ↗

Under review

Professional Service

Reviewer, NeurIPS Workshop 2025, AAAI 2026, AAMAS 2026

ICPC Coach, University of Washington ICPC 2026

Projects

Fine-grained Chinese Toxic Language Detection

NLP

- Reimplemented and improved Chinese toxic language classifier based on BERT
- Authored technical poster and report

Multi-Agent Reinforcement Learning Survey

RL

- Conducted literature review on MARL algorithms, especially in games.

Variational Autoencoder for Neural Data

DL

- Implemented VAE model for analyzing high-dimensional neural data

Technologies

Languages: Python, PyTorch, JAX, C++, Java, TypeScript, \LaTeX

Databases: MySQL, NoSQL, PostgreSQL, SQLite, Azure

Topics: Algorithm Design, Reinforcement Learning, Machine Learning, NLP, Computational Neuroscience

Languages: English, Chinese (Mandarin)