

Kaiyuan Liu

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  Scholar
  in Kaiyuan Liu

Education

B.S. University of Washington, Seattle 2022 ~2026
Double Major: Computer Science, Mathematics
 • 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
The Thirty-Ninth Annual Conference on Neural Information Processing Systems (NeurIPS 2025)
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)