

YUCHEN HOU

✉ hou.yuchen@northeastern.edu · ☎ (+1) 6179357519 ·

🎓 EDUCATION

Northeastern University, Boston 2025 – now

Ph.D. Student in Electrical Engineering

Shanghai Jiao Tong University (SJTU), Shanghai, China 2021 – 2025

BSc in Artificial Intelligence, GPA: 3.8/4.3

📌 PUBLICATION AND PREPRINT

FedQHD: Closed-Form Function-Space Federated Reinforcement Learning

Yuchen Hou, Yongshan Chen, Zhuowen Zou, Calvin Yeung, Mohsen Imani, Tian Lan, Mahdi Imani

Submitted to NeurIPS 2026 Conference

AgentIF-OneDay: A Task-level Instruction-Following Benchmark for General AI Agents in Daily Scenarios

Kaiyuan Chen, Qimin Wu, Taiyu Hou, Tianhao Tang, Xueyu Hu, Yuchen Hou et. al

Technical report; independent research collaboration

Self-Evolving Multi-Agent Networks for Software Development

Yue Hu, Yuzhu Cai, Yaxin Du, Xinyu Zhu, Xiangrui Liu, Zijie Yu, Yuchen Hou, Shuo Tang, Siheng Chen

Accepted to ICLR 2025 Conference

GNNs as Predictors of Agentic Workflow Performances

Yuanshuo Zhang, Yuchen Hou, Bohan Tang, Shuo Chen, Muhan Zhang, Xiaowen Dong, Siheng Chen

Accepted to Learning on Graphs Conference 2025

👥 EXPERIENCE

Multi-Agent Collaboration Sept. 2024 - Sept. 2025

Laboratory Internship

Stage 1: Developing LLM-driven multi-agent collaboration (MAC) systems for software development

Stage 2: Build reward model of agentic workflow for general tasks

- Baseline Research: ChatDev, Autogen, MetaGPT
- Benchmark Establishment: create benchmarks for software development in games and websites sectors, which are along with automatic evaluation of requirement correctness
- MAC systems: text-based environmental feedback by verifying the MAC network's output against a target proxy and leverages textual back propagation to update the network
- Collaboration with Prof. Siheng Chen (SJTU).

Development of an oncology vaccine based on deep learning and proteogenomics Jun. 2023

Bioinformatics, Python Linux, R, Shell Undergraduate research project

- Basic knowledge of bioinformatics: Survey investigation, pipeline comprehension.
- Reproduction and comparison of leading models: AlphaPeptdeep, Prosit, pDeep.
- Optimization of the peptide property prediction pipeline.
- Thesis writing and defense presentations.
- Enhancing peptide sequence prediction using transfer learning and LLM: BERTMHC.
- Collaboration with Prof. Wenguang Shao (SJTU).

Gesture-Based Virtual Reality Device Development June. 2024

VR hardware development Course Project

Simulation of robotic arm operations.

- Gesture data capture, data transmission
- Device and simulator setup: IsaacGym on PC, Oculus Quest APK.
- Unity development
- Collaboration with Prof. Yonglu Li (SJTU).

Medical Image Segmentation

Dec. 2023

Computer Vision, Python Individual Projects

Advanced MRI image segmentation techniques:

- Data preprocessing and augmentation from Kaggle datasets
- Model Implementation and comparison U-Net, Nested U-Net, and ResU-Net
- Conducted feature enhancement

♡ HONORS AND AWARDS

Outstanding Bachelor's Thesis Award, Shanghai Jiao Tong University Jun. 2025

Outstanding Undergraduate Research Project Award, Shanghai Jiao Tong University Oct. 2023

Undergraduate Merit Scholarship, Shanghai Jiao Tong University 2021-2022, 2022-2023

📌 MISCELLANEOUS

- Currently engaged as an Undergraduate Intern at the Multi-Agent Governance & Intelligence Crew (MAGIC) Lab, focusing on multi agent collaboration