

Education

Duke University

08/2024 – Present Durham, United States

Ph.D. in Electrical and Computer Engineering, Advisor: **Prof. Rishi Kamaleswaran**

GPA: 3.96/4.0

Southern University of Science and Technology (SUSTech)

08/2020 – 06/2024 Shenzhen, China

B.E. in Computer Science, Academic Advisor: **Prof. Xin Yao (Fellow, IEEE)**

GPA: 3.53/4.0

- Distinguished Graduate, Department of Computer Science (Top 1%, 2 out of 245 students)
- Guo Xie Bi Rong Fellowship (Top 4%); SUSTech Outstanding Undergraduate Alumnus, Class of 2024

University of California, Berkeley (UCB)

08/2022 – 01/2023 Berkeley, United States

Exchange Undergraduate Student

GPA: 4.0/4.0

Research Interests

World Models & Latent Dynamics, Self-Supervised Representation Learning, Sequential Decision-Making under Uncertainty, Embodied & Clinical Foundation Models.

Research Experiences

Clin-JEPA: Joint-Embedding Predictive Pretraining on EHR Patient Trajectories

08/2025 – Present

Duke University – Kamaleswaran Lab

Advised by **Prof. Rishi Kamaleswaran**

- Proposed *Clin-JEPA*, extending joint-embedding predictive (JEPA) world modeling to EHR patient trajectories, with a multi-phase co-training curriculum that makes LLM-based clinical pretraining stable at scale.
- A single pretrained backbone yields clinically meaningful patient representations and reliable long-horizon trajectory rollouts, transferring to diverse risk-prediction tasks without per-task fine-tuning or feature engineering.

Automated Lab: Scientific Lab Manipulation driven by Humanoid Robot

08/2024 – 03/2025

Duke University – General Robotics Lab

Advised by **Prof. Boyuan Chen**

- Engineered a high-fidelity sim-to-real learning platform and physical manipulation toolkit for the Unitree G1 humanoid robot to automate complex tasks in scientific laboratory environments.
- Developed a robust manipulation framework in Nvidia Isaac Gym utilizing a hybrid approach of Deep Reinforcement Learning (PPO) and traditional heuristics to enable precise, contact-rich control.

GasHunter: Empowering Efficient Gas Source Localization by Collaborative Robots

05/2023 – 06/2024

Tsinghua University - UC Berkeley Institute (Visiting Research)

Advised by **Prof. Xinlei Chen**

- Proposed *GasHunter*, a collaborative multi-robot system for gas source localization in patchy plume environments. Combined Langevin-inspired planning with dynamic multi-agent scheduling to balance exploration and exploitation.
- Achieved 20%+ higher success rate and 30%+ path efficiency over SOTA baselines in both simulation and real-world testbed.

Machine Learning-Based Problem Reduction for Large-Scale UFLP Optimization

01/2023 – 06/2024

Southern University of Science and Technology

Advised by **Prof. Xin Yao (Fellow, IEEE)**

- Proposed a ML-based framework for large-scale UFLP optimization by transferring knowledge from smaller instances.
- Proposed the *Local Adjacent Vector (LAV)* strategy, reducing instance size by up to 86.8% with <1% solution quality loss. Achieved significant acceleration and improved convergence across four benchmark meta-heuristics.

Publications

- **Yixuan Yang**, Mehak Arora, Ryan Zhang, Baraa Abed, Junseob Kim, Tilendra Choudhary, Md Hassanuzzaman, Kevin Zhu, Ayman Ali, Chengkun Yang, Alasdair Edward Gent, Victor Moas, and Rishikesan Kamaleswaran. **Clin-JEPA: A Multi-Phase Co-Training Framework for Joint-Embedding Predictive Pretraining on EHR Patient Trajectories.** *arXiv preprint arXiv:2605.10840*, May 2026.
- Yuhan Cheng*, Xuecheng Chen*, **Yixuan Yang**, Haoyang Wang, Jingao Xu, Chaopeng Hong, Susu Xu, Xiao-Ping Zhang, Yunhao Liu, and Xinlei Chen. **SniffySquad: Patchiness-Aware Gas Source Localization with Multi-Robot Collaboration.** *ACM Transactions on Sensor Networks*, Jan 2026. DOI: 10.1145/3786599.
- Yuhan Cheng*, Xuecheng Chen*, **Yixuan Yang**, Haoyang Wang, Yuxuan Liu, and Xinlei Chen. **Poster: Olfactory Sensing in Turbulent Airflow via Collaborative Robots.** In *Proceedings of the 25th International Workshop on Mobile Computing Systems and Applications (ACM HotMobile)*, 2024.
- Shuaixiang Zhang, **Yixuan Yang**, Hao Tong, and Xin Yao. **Learning-Based Problem Reduction for Large-Scale Uncapacitated Facility Location Problems.** In *IEEE Congress on Evolutionary Computation (CEC)*, 2024.

Academic Service & Technical Skills

Government Service: Invited by the North Carolina AI Leadership Council as a Student Researcher on its **Tech, Data, & Infra team** (01/2026 – 06/2026); work acknowledged in the official **NC Statewide AI Strategic Roadmap** (announced by Gov. Josh Stein, Jul 2026).

Teaching Assistant: DECISION 520Q/618: Data Science for Business, Duke Fuqua School of Business (08/2024 – 10/2024).

Reviewer: ACL Rolling Review (ARR, 2026); ICLR 2026 Workshop on Foundation Models for Science (FM4Science, 2026); IEEE International Conference on Healthcare Informatics (ICHI, 2026); IEEE Transactions on Circuits and Systems for Video Technology (TCSVT, 2026); IEEE Transactions on Multimedia (TMM, 2026); IEEE J-STSP (Intelligent Robotics SI, 2023).

Languages: Python, JavaScript/React, C/C++, Java, SQL, $\LaTeX$

AI/ML Stack: PyTorch, Hugging Face Ecosystem, CUDA, MIMIC-IV / EHR Databases, Nvidia Isaac Gym/Genesis

Development: Agentic AI coding (Claude Code, OpenAI Codex), Git, Linux; hardware prototyping (Raspberry Pi, Arduino, Fusion 360, UWB systems)