

Yuxiao Qu

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Research Objective

My research interests lie in exploring the intersection of reinforcement learning, foundation models, and AI applications in scientific domains. I am deeply passionate about creating innovative algorithms and systems that address diverse decision-making challenges in real-world scenarios with reliability, robustness, and efficacy.

Education

Carnegie Mellon University

Master of Science in Machine Learning

Advisor: Prof. Aviral Kumar

Aug 2023 - Present

Pittsburgh, PA

University of Wisconsin - Madison

Bachelor of Science in Computer Science and Mathematics

Advisor: Prof. Josiah P. Hanna

Sep 2020 – Dec 2022

Madison, WI

The Chinese University of Hong Kong

Major: Computer Science

Sep 2017 – May 2020

Hong Kong

Skills & Courses

Skills: Python, C/C++, Java, JavaScript, SQL, React, Linux, Django, LaTeX, GitHub, GCP, Jira, Kubernetes

Courses: Reinforcement Learning, Algorithms, Machine Learning, Computer Graphics, Computer Vision, Operating Systems, Computer Networks, Robotics, Numerical Analysis, Probability, Linear Algebra, Discrete Mathematics

Research Experience

Simulation of the Connected and Automated Driving Systems (CADS)

Supervisor: Professor Bin Ran

□ Constructed a Deep Q-Learning model to find optimal movement trajectory for autonomous vehicles

Sep 2021 – Jan 2022

University of Wisconsin – Madison

Telecare Systems Design

Supervisor: Professor Bilge Mutlu

□ Developed a user-friendly application for Google smart displays that allows elderly users to interact using their voice or touch to easily obtain health care information

Sep 2020 – Sep 2021

University of Wisconsin – Madison

Saving Computation by Slicing Neural Networks Using SVM

Supervisor: Professor Anand Sarwate

□ Devised a strategy to smartly divide data processing between a smart device and a central computer, ensuring quick and efficient performance by optimizing where and how the data is analyzed

Jun 2020 – Sep 2020

Rutgers

Generating Adversarial Examples in Text Classification

Supervisor: Professor Michael R. Lyu

□ Systematically attacked state-of-the-art text classifiers via white/black-box methods
□ Awarded Faculty 2019 Summer Research *Best Project Award* out of more than 40 participants

Jun 2019 – Sep 2019

The Chinese University of Hong Kong

Work Experience

Morgridge Institute for Research

Apr 2023 – Aug 2023

Research Software Engineer

Madison, WI

- Improved the robustness of a data management tool (osdf-client) to handle various internet link formats and slow data transfers, and to better recognize a wide range of job listings.
- Developed a server and a command-line interface tool using Go programming language to manage and organize data namespaces
- Designed an interactive question-and-answer system for academic literature, utilizing advanced language models to make digital resources more engaging and easier to use for users

Last Lock, Inc.

Sep 2021 – May 2022

Software Engineer (Part-time)

Madison, WI

- Designed and devised a real-time smart lock dashboard using React.js, MongoDB, and NodeJS

Teaching Experience

Undergraduate Teaching Assistant

University of Wisconsin – Madison

- COMP SCI 577: Introduction to Algorithms (Honor Session)

Fall 2022

- COMP SCI 537: Introduction to Operating Systems

Fall 2022

Publications

1. Guided Data Augmentation for Offline Reinforcement Learning and Imitation Learning

Nicholas E. Corrado, **Yuxiao Qu**, John U. Balis, Adam Labiosa, Josiah P. Hanna

International Conference on Robotics and Automation (ICRA), 2024 (Under Review)

2. FLEE-GNN: A Federated Learning System for Edge-Enhanced Graph Neural Network in Analyzing Geospatial Resilience of Multicommodity Food Flows

Yuxiao Qu, Jinmeng Rao, Song Gao, Qianheng Zhang, Wei-Lun Chao, Yu Su, Michelle Miller, Alfonso Morales, Patrick Huber

ACM SIGSPATIAL International Workshop on AI for Geographic Knowledge Discovery, 2023

3. Simulation-Acquired Latent Action Spaces for Dynamics Generalization

Nicholas Corrado, **Yuxiao Qu**, Josiah P. Hanna

Proceedings of Machine Learning Research (PMLR), 2022

4. Polite or Direct? Conversation Design of a Smart Display for Older Adults Based on Politeness Theory

Yaxin Hu, **Yuxiao Qu**, Adam Maus, Bilge Mutlu

ACM CHI Conference on Human Factors in Computing Systems (CHI), 2022

5. TreeNet: Deep Point Cloud Embedding for Routing Tree Construction

Wei Li, **Yuxiao Qu**, Gengjie Chen, Yuzhe Ma, Bei Yu

ACM Asian and South Pacific Design Automation Conference (ASPDAC), 2021 (Best Paper Award)

Awards

- 2021 ICPC North Central North American Regional Champion (Ranked 15th out of 96 teams nationwide)
- Dean's List on Fall 2020, Spring 2021, Fall 2021, Spring 2022