

Zhiqin “Bill” Qian

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Education

Rice University

PhD student, Computer Science, Advisor: Vaibhav Unhelkar, GPA: 4.00/4.00

BA, Computer Science, GPA: 3.95/4.00, Magna Cum Laude

- Research Interests: Human-AI Interaction, Value Alignment, Reinforcement Learning
- Relevant Coursework: Algorithms and Data Structures, Reinforcement Learning, Deep Learning for Vision and Language, Convex Optimization, Analysis, Linear Algebra, Sciences of the Mind
- Honors: Distinction in Research and Creative Work (2023)

Houston, TX

May 2023 - Present

Aug 2019 - May 2023

Research Experience

Human-Centered AI and Robotics Group, Rice University

Research assistant

Houston, TX

May 2021 - Present

Project 1 (Current): Human-Aligned Decision Making in Long-Horizon Tasks

- Design a decision-making framework that incorporates both task rewards and human preferences.
- Leverage the strengths of reinforcement learning and large language models to learn agent behaviors that align with human preferences and successfully complete tasks.

Project 2: Simulation Testbed for Human-Robot Teamwork

- Developed a computer-based testbed in Unity for conducting simulated human-robot interaction experiments.

Project 3: After Action Review to Improve Human-Robot Teamwork

- Created a novel framework for collecting high-resolution human behavioral and cognitive data without disrupting task performance.

Treangen Lab, Rice University

Research assistant

Houston, TX

May 2020 - Jan 2021

- Benchmarked the performance of computational biology softwares on detecting virulence fingerprints in DNA sequences.

Publications

1. **Qian, Z.***, Orlov-Savko, L.*, Neubauer, C., Gremillion, G., Unhelkar, V. Measuring Variations in Workload during Human-Robot Collaboration through Automated After-Action Reviews. *Companion of the ACM/IEEE International Conference on Human-Robot Interaction (HRI)*, 2024.
2. Orlov-Savko, L.*, **Qian, Z.***, Gremillion, G., Neubauer, C., Canady, J., Unhelkar, V.. RW4T Dataset: Data of Human-Robot Behavior and Cognitive States in Simulated Disaster Response Tasks. *ACM/IEEE International Conference on Human-Robot Interaction (HRI)*, 2024.
3. Balaji, A.*¹, Kille, B.*, Kappell, A. and Godbold, G., Diep, M., Elworth, R., **Qian, Z.**, Albin, D., Nasko, D., Shah, N., Pop, M., Segarra, S., Ternus, K., Treangen, T. SeqScreen: accurate and sensitive functional screening of pathogenic sequences via ensemble learning. *Genome Biol* 23, 133, 2022.

Teaching

Teaching Assistant, Rice University

Reinforcement Learning (COMP 552)

Artificial Intelligence (COMP 557)

Algorithmic Thinking (COMP 182)

Advanced Object-Oriented Programming and Design (COMP 310)

Reasoning About Algorithms (COMP 382)

Houston, TX

Fall 2024

Spring 2024

Spring 2023, Spring 2021

Fall 2022

Fall 2021

Volunteering

Office of Academic Advising, Rice University

Peer Academic Advisor

Houston, TX

Feb 2020 - May 2023

- Oversaw and coordinated academic advising programs during orientation week for 100+ new students.
- Held monthly office hours to help students navigate through academic procedures and resources.