Zhiqin "Bill" Qian

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scholar scholar.google.com/citations?user=Eva4ZlYAAAAJ

I am a fourth-year Ph.D. candidate in Computer Science at Rice University, advised by Vaibhav Unhelkar in the Human-AI Teaming Lab. My research aims to advance physical AI by helping agents and robots work effectively with people, from turning natural-language instructions into rewards that guide an agent's learning to coaching human-robot teams to learn and improve together.

Education

Rice University, Houston, TX **May 2023 – *present***
Ph.D. Candidate in Computer Science, GPA: 4.00/4.00
Advisor: Vaibhav Unhelkar

Rice University, Houston, TX **Aug 2019 – May 2023**
B.A. in Computer Science, Magna Cum Laude, GPA: 3.95/4.00

Awards & Honors

Distinction in Research and Creative Work, Rice University 2023
President's Honor Roll, Rice University 2019, 2021, 2023

Research Experience

Research Assistant, Human-AI Teaming Lab, Rice University May 2021 – *present*
Building AI agents and robots that work well alongside people.

Research Assistant, Treangen Lab, Rice University May 2020 – Jan 2021
Benchmarked a machine learning tool that scans DNA for harmful pathogens.

Publications

[5] **Hierarchical Reward Design from Language: Enhancing Alignment of Agent Behavior with Human Specifications**.
Z. Qian, R. Diaz, S. Seo, V. Unhelkar.
International Conference on Autonomous Agents and Multiagent Systems (AAMAS), 2026.

[4] **AI-Assisted Coordination of Human Teams in Situated Tasks**.
S. Seo, Z. Qian, V. Unhelkar.
Proceedings of the AAAI Symposium Series (AAAI Symposium), 2025.

[3] **RW4T Dataset: Data of Human-Robot Behavior and Cognitive States in Simulated Disaster Response Tasks**.
L. Orlov-Savko*, Z. Qian*, G. Gremillion, C. Neubauer, J. Canady, V. Unhelkar.
ACM/IEEE International Conference on Human-Robot Interaction (HRI), 2024.

[2] **Measuring Variations in Workload during Human-Robot Collaboration through Automated After-Action Reviews**.
Z. Qian*, L. Orlov-Savko*, C. Neubauer, G. Gremillion, V. Unhelkar.
Companion of the ACM/IEEE International Conference on Human-Robot Interaction (HRI), 2024.

[1] **SeqScreen: Accurate and Sensitive Functional Screening of Pathogenic Sequences via Ensemble Learning**.
A. Balaji*, B. Kille*, A. Kappell, G. Godbold, M. Diep, R. Elworth, Z. Qian, D. Albin, D. Nasko, N. Shah, M. Pop, S. Segarra, K. Ternus, T. Treangen.
Genome Biology, 23(1):133, 2022.

* equal contribution

Teaching

Teaching Assistant, Rice University

Reinforcement Learning (COMP 552) Fall 2023, Fall 2025
Guest lectured twice and designed the final exam.
Artificial Intelligence (COMP 557) Spring 2024
Algorithmic Thinking (COMP 182) Spring 2021, Spring 2023
Advanced Object-Oriented Programming & Design (COMP 310) Fall 2022
Reasoning About Algorithms (COMP 382) Fall 2021

Led office hours and graded homework assignments and exams for all other courses.

Mentoring

Undergraduate Researchers

Arnan Bawa 2024
Extended the disaster-response simulation with a replay feature.

Isauro Sanchez (Summer Undergraduate Research Fellow) 2023 – 2024
Built a 3D disaster-response simulation for studying and improving teamwork.

Service

Reviewer

THRI: ACM Transactions on Human-Robot Interaction 2025 – 2026
HRI Companion: ACM/IEEE Intl. Conference on Human-Robot Interaction 2024

University Service

Peer Academic Advisor, Rice Office of Academic Advising Feb 2020 – May 2023
Coordinated orientation advising for 100+ new students; held monthly office hours.

Skills & Coursework

Programming	Python, C#, Java, C
ML & RL	PyTorch, Stable-Baselines3, Gymnasium, PettingZoo, LLM APIs
Tools	Unity, Hello Robot Stretch, Zephyr BioHarness, Tobii eye trackers
Coursework	Algorithms and Data Structures, Reinforcement Learning, Deep Learning for Vision and Language, Bayesian Statistics, Convex Optimization, Analysis, Linear Algebra, Sciences of the Mind