

# Peizhu “Pam” Qian

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## Education

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### Ph.D., Computer Science

Rice University, Houston, Texas

Aug 2019 - May 2025

### Thesis: Interactive AI Tutors for Human Task Learning

Committee: Vaibhav Unhelkar (chair), Lydia Kavradi, Marcia O'Malley

**Keywords: Human-Robot Interaction, Explainable AI, Intelligent Robotic Tutors, Healthcare Robotics**

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### B.S., Computer Science and Mathematics

Simmons College, Boston, Massachusetts USA  
Summa Cum Laude

Sept 2016 - May 2019

## Awards and Distinctions

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- **George R. Brown School of Engineering Future Faculty Fellow** (w/ \$1,000 travel grant). 2024
- Schmidt Science Fellows Nominations (~500 worldwide) 2024
- Rice Engineering Alumni Travel Grant. \$750. 2023
- **Best Video Demonstration Award at AAMAS.** 2022
- Rice University Jill Pitman Jones Leadership Award. \$2,500. 2021
- Rice University Pollard Fellowship in Engineering. \$40,333. 2019-2020
- Simmons University Presidential Scholarship. \$76,000. 2016-2019
- Student-Athlete of the Year (NCAA D3 Rowing). 2019
- Grace Hopper Celebration Student Scholarship. \$1,500. 2018
- ACM Richard Tapia Conference Student Scholarship. \$750. 2018
- **Runner-up for Castellan Award for best student paper with special recognition at SCiP.** 2018
- Winner of SIGHPC Computing4Change (C4C) Competition (w/ \$250 cash prize) 2018

## Peer-Reviewed Conference and Journal Papers

\* indicates equal contribution. # indicates students I mentored.

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**AIES 2024**

[P1]

**PPS: Personalized Policy Summarization for Explaining Sequential Behavior of Autonomous Agents.** [\[PDF from AAAI\]](#)

**Peizhu Qian\***, Harrison Huang<sup>#</sup>, and Vaibhav Unhelkar. Proceedings of the AAAI/ACM Conference on Artificial Intelligence, Ethics, and Society (AIES). San Jose, California USA. October 2024. Acceptance Rate: 31.8%.

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**HRI 2024**

[P2]

**Interactively Explaining Robot Policies to Humans in Virtual and Physical Training Environments.** [\[PDF from ACM\]](#)

**Peizhu Qian** and Vaibhav Unhelkar. Companion of the ACM/IEEE International Conference on Human-Robot Interaction (HRI). Denver, Colorado USA, March 2024.

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**AAAI 2024**



[P3]

**I-CEE: Tailoring Explanations of Image Classification Models to User Expertise.** [\[PDF from AAAI\]](#)

Yao Rong, **Peizhu Qian**, Vaibhav Unhelkar, and Enkelejda Kasneci. Proceedings of the AAAI Conference on Artificial Intelligence (AAAI). Vancouver, Canada. February 2024. Acceptance Rate for the Special Track on AI for Social Impact: 21.3%.

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<b>TPAMI 2023</b> [P4]	<b>Towards Human-centered Explainable AI: User Studies for Model Explanations.</b> <a href="#">[PDF from IEEE]</a> Yao Rong, Tobias Leemann, Thai-trang Nguyen, Lisa Fiedler, Tina Seidel, <b>Peizhu Qian</b> , Vaibhav Unhelkar, Gjergji Kasneci, and Enkelejda Kasneci. IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI). November 2023. Impact Factor: 24.3.
<b>RO-MAN 2023</b> [P5]	<b>Robotic Tutors for Nurse Training: Opportunities for HRI Researchers.</b> <a href="#">[PDF from IEEE]</a> Carlos Quintero-Pena*, <b>Peizhu Qian*</b> , Nicole M. Fontenot, Hsin-Mei Chen, Shannan K. Hamlin, Lydia E. Kavraki, Vaibhav Unhelkar. Proceedings of IEEE International Conference on Robot and Human Interactive Communication (RO-MAN). Busan Korea, August 2023.
<b>AAMAS 2022</b> [P6]	<b>Evaluating the Role of Interactivity on Improving Transparency in Autonomous Agents.</b> <a href="#">[PDF from IFAAMAS]</a>  <b>Peizhu Qian</b> and Vaibhav Unhelkar. Proceedings of the International Conference on Autonomous Agents and Multiagent Systems (AAMAS). <b>Best Video Demonstration Award.</b> Online, May 2022, IFAAMAS, 9 pages. AR: 23.3%.
<b>SCiP 2018</b> [P7]	<b>Life in the Semantic Space: Structures of the Language Network.</b>  <b>Peizhu Qian</b> , Zhiqiang Cai, and Xiangen Hu. Society for Computers in Psychology 48th Annual Meeting (SCiP). <b>Runner-up of the Castellan Award for best student paper with special recognition.</b> New Orleans, Louisiana USA. November, 2018.

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### Papers under Review

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[P8]	<b>ASTRID: A Robotic Tutor for Nurse Training to Reduce Healthcare-Associated Infections.</b> <b>Peizhu Qian</b> , Filip Bajraktari#, Carlos Quintero-Peña, Qingxi Meng, Shannan Hamlin, Vaibhav Unhelkar, and Lydia E. Kavraki.
[P9]	<b><i>Title anonymized for double-blind review</i></b> Harrison Huang#, <b>Peizhu Qian</b> , Adriana Paola Badran Campo#, and Vaibhav Unhelkar.
[P10]	<b>Look as you Leap: Co-optimizing Motion and Perception of High-DoF Robots.</b> Qingxi Meng, Carlos Quintero-Peña, <b>Peizhu Qian</b> , Zachary Kingston, Shannan Hamlin, Vaibhav Unhelkar, and Lydia E. Kavraki.

### Peer-Reviewed Workshop Papers

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<b>AAMAS 2022</b> [W1]	<b>Evaluating the Role of Interactivity on Improving Transparency in Autonomous Agents.</b> <b>Peizhu Qian</b> and Vaibhav Unhelkar. Workshop on Rebellion and Disobedience of Artificial Agents (RaD-AI). International Conference on Autonomous Agents and Multiagent Systems (AAMAS). Online. May 2022.
<b>HRI 2022</b> [W2]	<b>On the Role of Interactivity in Improving Transparency in Robot Behavior.</b> <b>Peizhu Qian</b> and Vaibhav Unhelkar. Workshop on Fairness and Transparency in HRI. ACM/IEEE International Conference on Human-Robot Interaction (HRI). Online. March 2022.
<b>R:SS 2021</b> [W3]	<b>Towards Interactively Improving Human Users' Understanding of Robot Behavior.</b> <b>Peizhu Qian</b> and Vaibhav Unhelkar. Workshop on Robotics for People (R4P). Robotics: Science and Systems (R:SS). Online. July 2021.
<b>MIT URC 2018</b> [W4]	<b>Data Mining in Sports: the Relationship between Anthropometric Characteristics of Collegiate Female Rowers and Pacing Strategies on a 2000-meter Ergometer Test.</b> <b>Peizhu Qian.</b> 2018 IEEE MIT Undergraduate Research Conference. 2018.

## Doctoral Consortiums

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**CHIL'24**  
[DC1] **Interactive Tutor for Human Task Learning.**  
**Peizhu Qian.** Conference on Health, Inference, and Learning (CHIL). New York City, New York USA. June 2024.

## Invited Talks

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**WPI** **Preparing Humans for a Safe Future around Robots. Guest Lecture** at RBE 550 Motion Planning, invited by Dr. Constantinos Chamzas. Department of Robotics Engineering, Worcester Polytechnic Institute (WPI), Worcester, Massachusetts USA. November 2023.

**UT Austin** **AI TEACHER: An Interactive XAI Framework for Explaining Robot Behavior.** Human-Centered Robotics Laboratory at the University of Texas Austin. PI: Dr. Luis Sentis. Austin, Texas USA. April 2023.

**Rice** **Preparing Humans for a Safe Future around Robots. Guest Lecture** at PSYC 441/541 Human-Computer Interaction, invited by Dr. Jing Chen. Rice University. Houston, Texas USA. April 2023.


**Westlake (China)** **Preparing Humans for a Safe Future around Robots.** Machine Intelligence Lab at Westlake University. PI: Dr. Donglin Wang. Hangzhou, Zhejiang China. November 2022.

**Rice** **Preparing Humans for a Safe Future around Robots.** Center for Transforming Data to Knowledge at Rice University. PI: Dr. Xia Hu. Houston, Texas USA. October 2022.

**Pi Mu Epsilon** **Human-Robot Interaction: Robot Transparency through Guided Interaction. Keynote** at the 2021 Pi Mu Epsilon Mathematics Honor Society Induction Ceremony, invited by Dr. Donna Beers. Boston, Massachusetts USA. March 2021.

## Computing Competitions

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**C4C**  **SIGHPC Computing4Change (C4C) Competition** at SC18, the International Conference for High-Performance Computing, Networking, Storage, and Analysis. **Winner.** Dallas, Texas USA. November 11-14, 2018.

**Project: Resisting Cultural Acceptance of Violence.**  
Teammates: Claire Fiorino, Nilo Espinoza, and Hoano Rosario.

## Teaching

Evaluation scores indicate an average of all metrics.

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**COMP 182 Algorithmic Thinking**, Rice University, Sp'24

Role: **Instructor**

Enrolled: 28

Course Evaluation: **1.54** (1 = Outstanding, 5 = Poor) [[Full evaluation](#)]

Instructor Evaluation: **1.14** (1 = Outstanding, 5 = Poor) [[Full evaluation](#)]

**COMP 600 Graduate Seminar**, Rice University, Fall'21, Sp'22, Fall'22, Sp'23, Fall'23

Role: Co-instructor

Enrolled: 100+

**COMP 642 Machine Learning**, Rice University, Sp'23

Role: Teaching Assistant (TA)

Enrolled: 61

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**COMP 480/580 Probabilistic Algorithms and Data Structures**, Rice University, Fall'22

Role: Teaching Assistant (TA)

Enrolled: 59

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**Web Design**, IGDVS Girls Summer Camp, Ukiah, California USA, Summer'17 '19

Role: **Instructor**

Enrolled: 35

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## Advising & Mentoring

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- **Harrison Huang**, Rice undergraduate'23 and MS'25. Mentored for three years and Harrison had **two first-author** papers (one published and one submitted).
- **Radenko Pejić**, summer intern (2021) from Serbia. Now pursuing MS in computer science at EPFL.
- **Filip Bajraktari**, summer intern (2023, 2024) from Serbia. Coauthored a paper on Robotic Tutors that is currently under review.
- **Adriana Paola Badran Campo**, summer intern (2023) from Columbia. Coauthored a paper on Explainable AI that is currently under review.
- **Ephraim Osei**, undergraduate student from Ghana whom I advised for PhD application. Now **Ph.D. student** in Electrical and Computer Engineering at George Mason University with **full funding**.

## Service to the Field

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### Conference Organizer

- Texas Regional Robotics Symposium (TEROS 2023) [[website](#)]

### Program Committee

- AAAI Conference on Artificial Intelligence (AAAI), 2025

### Workshop Organizer

- Workshop on Explainability for Human-Robot Collaboration at ACM/IEEE International Conference on Human-Robot Interaction (HRI 2025)

### Reviewer

- International Conference on Robotics and Automation (ICRA), 2025
- ACM/IEEE International Conference on Human-Robot Interaction (HRI), 2022-2025
- International Conference on Autonomous Agents and Multiagent Systems (AAMAS), 2021-2024

### Student Organizations

- **President**, Rice University Computer Science Graduate Student Association, 2023-2024

## External Internships

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**Institute for Intelligent Systems at the University of Memphis**, Memphis, Tennessee USA, May-August 2018

- Built an NLP semantic space for the intelligent tutoring system AutoTutor on Google App Engine.
- Implemented AutoTutor in GIFT (Generalized Intelligent Framework for Tutoring), and wrote the software requirements specification documents for the AutoTutor authoring tool.
- AutoTutor simulates the discourse patterns of human tutors and has been used extensively for research and in classrooms since 1999.

**Google**, Cambridge, Massachusetts USA, January 2018

- Created Android mobile apps for games using Java, Android Studio, and SDK tools.
- Designed the UI for the applications with Android Studio.

## List of References

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1. **Dr. Vaibhav Unhelkar.** Relation: Ph.D. Advisor  
Assistant Professor of Computer Science  
Director, Human-Centered AI and Robotics Group  
Rice University  
[vaibhav.unhelkar@rice.edu](mailto:vaibhav.unhelkar@rice.edu)

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2. **Dr. Lydia Kavraki.** Relation: Ph.D. Thesis Committee Member & Collaborator  
Noah Harding Chair, Professor of Computer Science  
Professor of Mechanical Engineering  
Professor of Bioengineering Professor of Electrical and Computer Engineering  
Director, The Ken Kennedy Institute  
Rice University  
[kavraki@rice.edu](mailto:kavraki@rice.edu)

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3. **Dr. Marcia O'Malley.** Relation: Ph.D. Thesis Committee Member  
Chair, Department of Mechanical Engineering  
Thomas Michael Panos Family Professor in Mechanical Engineering  
Rice University  
[omalley@rice.edu](mailto:omalley@rice.edu)

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4. **Dr. Shannan Hamlin.** Relation: Collaborator & PI  
Associate Professor of Nursing, Academic Institute  
Director, Center for Nursing Research, Education and Practice  
Houston Methodist  
[shamlin@houstonmethodist.org](mailto:shamlin@houstonmethodist.org)

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5. **Dr. Todd Treangen.** Relation: Teaching Supervisor  
Associate Professor of Computer Science  
Rice University  
[treangen@rice.edu](mailto:treangen@rice.edu)