Julianna Schalkwyk

914-312-3780 | julianna.schalkwyk@gatech.edu | google scholar | Julianna Schalkwyk

Education

Georgia Institute of Technology, USA 2023 - 2028
Doctor of Philosophy in Computer Science
Focus on Human-Interactive Robot Learning

Harvey Mudd College, USA 2019 - 2023
Bachelor of Science in Computer Science and Mathematics

Conference Publications

RSS 2025 E. Hedlund-Botti*, **J. Schalkwyk***, N. Moorman, C. Yang, L. Seelam, S. Van Waveren, R. Perkins, P. Robinette, M. Gombolay. June, 2025. "Learning Interpretable Features from Interventions" *Robotics: Science and Systems.*

CISS 2023 H. Friedman, A. Mania-Kilaas, **J. Schalkwyk**, H. Ahmed, J. Haddock. March, 2023. "An Interpretable Joint Non-Negative Matrix Factorization-Based Point Cloud Distance Measure" *Conference on Information Sciences and Systems.*

ICAPS 2022 M. Morgan*, **J. Schalkwyk***, H. Wang*, H. Davalos*, R. Martinez*, V. Rohilla*, James Boerkoel*. June, 2022. "Simple Temporal Networks for Improvisational Teamwork" *International Conference on Automated Planning and Scheduling.*

Journal Publications

Auton. Robots 2025 E. Hedlund-Botti, **J.Schalkwyk**, M. Johnson, M. Gombolay. October, 2025. "The Effects of Robot Learning on Human Teachers for Learning from Demonstration" *Autonomous Robots.*

Workshop and Symposium Publications

FSS 2024 **J. Schalkwyk**, S. van Waveren, M. Schrum, A. J. London, P. Robinette, M. Gombolay. November, 2024. "Ethics of Paternalistic Robots in the Care of Older Adults" AAAI Fall Symposium Series on Artificial Intelligence for Aging in Place.

LEAP 2024 E. Hedlund-Botti, N. Moorman, **J. Schalkwyk**, C. Yang, L. Seelam, S. van Waveren, R. Perkins, P. Robinette, M. Gombolay. March, 2024. "Towards Learning Interpretable Features from Interventions" Workshop on Lifelong Learning and Personalization in Long-Term Human-Robot Interaction at the *ACM/IEEE International Conference on Human-Robot Interaction.*

Workshop and Symposia Organizer

AI-CARING: Student Symposium 01/2025 - 04/2025

- This symposium brought together student researchers from across the many institutes of AI-CARING to share their research, brainstorm solutions to shared roadblocks, and learn more about the resources available through AI-CARING.
- This symposium also helped prepare students for their next steps after AI-CARING with an elevator-pitch workshop and a panel on industry vs. academia research careers.

Honors and Awards

Harvey S. Mudd Merit Award Recipient, $40,000 2019-2023
Harvey Mudd College National Merit Scholarship, $4,000 2019-2023
Girl Scout Gold Award 2018

*Equal contribution.

Work Experience

Graduate Research Assistant - Georgia Institute of Technology 08/2023-Present
Advisor: Matthew Gombolay

Human-Interactive Robot Learning

- Created a framework to enable robots to learn corrections and adapt towards user goals from user interruptions of a robot policy and evaluated the framework in a series of user studies with the Spot Boston Dynamics robot [RSS 2025].
- Analyzed user study data to extract demonstration trajectories and investigated how demonstration quality is impacted by teaching modality and how demonstration quality mediates the relationship between teaching modality and the teacher's perceptions of themselves and the experimenter [Auton. Robots 2025]

Robot Ethics

- Designed a user study to empirically investigate how users would want an assistive robot to handle the ethical dilemma of whether or not it should disclose private information to fulfill its purpose across three activities of daily living (health, work, and travel) in which a SoftBank Pepper robot presents the participant with a series of scenarios and asks them to choose from a set of options ranging from preserving their privacy to disclosing private information [Under Review].

Explainable AI

- Implemented an online between-subjects user study to investigate what Explainable AI modalities work best with Perfusionists and analyzed how different types of Explainable AI influence perfusionists understanding and reliance on the Explainable AI. [In Progress]

Software Engineer - Pure Storage 05/2023 - 08/2023
Internship

- Worked with a team in File Array on a prototype system to sync updates between different databases.
- Developed skills in C++ and Java.

Research Assistant - Harvey Mudd College 05/2022-08/2022
Undergraduate Research Experience
Advisors: Jamie Haddock,, Heather Zinn-Brooks

- Worked with Professor Haddock and Professor Zinn-Brooks on investigating a new bounded confidence model through simulation and proving convergence of the model through proof techniques developed for this model.

Research Assistant - Harvey Mudd College 05/2021-12/2021
Undergraduate Research Experience
Advisor: James Boerkoel

- Proved the soundness and complentess of a Mixed-Integer Linear Program solution to the novel framework of Simple Temporal Networks for Improvisational Teamwork and characterized these new networks in simulation. [ICAPS 2022].

Teaching Experience

School of Computer Science - Georgia Institute of Technology
Teaching Assistant
Advisors: Matthew Gombolay, Harish Ravichandar

- CS 3630: Introduction to Robotics and Perception Fall 2024

Department of Computer Science - Harvey Mudd College
Teaching Assistant
Advisors: Lucas Bang, Xanda Schofield, George Montanez

- CS 131: Programming Languages — Spring 2023
- CS 130: Algorithms — Spring 2022, Fall 2022
- CS 81: Computability and Logic — Fall 2021
- MATH 131: Real Analysis — Fall 2021
- CS 70: Data Structures and Program Development — Spring 2021

Reviewing Experience

Journals and Workshops

International Conference on Intelligent Robots and Systems (IROS) 2024
ACM Conference on Human Factors in Computing Systems (CHI) 2024

Symposia and Workshops

AAAI Fall Symposium Series (FSS) 2024

Skills and Miscellaneous

Robotic Platforms: Boston Dynamics Spot, SoftBank Robotics Pepper, Kinova MOVO Beta
Programming Languages, APIs: Python, R, C++, MATLAB, LaTeX, Java, Javascript
Libraries: PyTorch, NumPy, pandas, OpenCV, ROS
Operating Systems: MacOS, Linux (Ubuntu), WindowsOS