Rabeya Jamshad

Computer Science and Engineering
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Research Interests

Robotics, Human-Robot Interaction, Artificial Intelligence, Multimodal Systems
Healthcare Technology, Action Teams, Team Dynamics

Education

University of California San Diego 2021 - 2026 (Expected)
Ph.D., Computer Science and Engineering
Advisor: Dr. Laurel Riek

Georgia Institute of Technology 2017 - 2019
M.Sc., Electrical and Computer Engineering
Advisor: Dr. Ayanna Howard

Lahore University of Management Sciences 2011 - 2015
B.S., Electrical Engineering
Advisor: Dr. Abubakr Muhammad

Experience

Ph.D. Student Researcher, UC San Diego 2021 - Present
Designed and developed robot systems to support human-robot teaming

- Developed simulation for validating intent inference models in human-robot teams
- Developed and investigated multimodal robot interaction behaviors to support fluent collaboration in human-robot teams
- Conducted large-scale study to support clinicians who are frequently interrupted
- Developed embodied conversational agent using Google Cloud Speech API
- Collected and analyzed multimodal human-robot interaction data
- Validated robot design and behaviors through controlled human-subject experiments

Senior Robotics Engineer, Xavor Corporation 2020 - 2021
Developed control system and SLAM for a mobile service robot

- Collaborated with other researchers and the product development team to develop a companion robot for older adults
- Developed and integrated a multimodal AI control system in ROS

Business Development Manager – Research Assistant, LUMS 2019 - 2020
Supported the development and proliferation of sustainable technology

- Developed research agendas for river and forestry monitoring

M.Sc. Student Researcher, Georgia Institute of Technology 2018 - 2019
Developed a robot for infants with neuromuscular disorders

- Developed a robotic crib mobile to facilitate the early diagnosis of neuromuscular disorders in infants
- Validated the effectiveness of the robotic intervention through at-home experiments

Selected Publications

Haripriyan, A., **Jamshad, R.,** Ramaraj, P., and Riek, L.D. (2024) "Human-Robot Action Teams: A Behavioral Analysis of Team Dynamics". In *Proceedings of the 33rd IEEE International Conference on Robot and Human Interactive Communication (RO-MAN).*

Jamshad, R., Haripriyan, A., Sonti, A., Simkins, S., and Riek, L. D. (2024). Taking Initiative in Human-Robot Action Teams: How Proactive Robot Behaviors Affect Teamwork. *In review.*

Jamshad, R., Haripriyan, A., Sonti, A., Simkins, S., and Riek, L.D. (2024) "Human-Robot Action Teams: How Robots Can Be Proactive Teammates". In *Companion Proc. of the ACM/IEEE International Conference on Human-Robot Interaction (HRI).*

Matsumoto, S., Ghosh, P., **Jamshad, R.,** and Riek, L. D. (2023). Robot, Uninterrupted: Telemedical Robots to Mitigate Care Disruption. In *Proceedings of the ACM/IEEE International Conference on Human Robot Interaction (HRI)*. [Acceptance rate: 25%]

Jamshad, R., Fry, K.E., Chen, Y.P. and Howard, A., (2019). Design of a robotic crib mobile to support studies in the early detection of cerebral palsy: A pilot study. In *IEEE International Conference on Robot and Human Interactive Communication (RO-MAN).*

Jamshad, R., Qureshi, M.U. and Grijalva, S., (2018). Geographic information systems (GIS) image analysis for prioritizing power system restoration. In *2018 Clemson University Power Systems Conference (PSC)*. **Third Place for Outstanding Conference Paper**

Professional Competencies

Software and Programming Languages
C++, Python, ROS, Matlab, Linux, Windows, Arduino, Latex

Control Design and Robotics
Control Systems | Mobile Robotics | Search and Optimization | Artificial Intelligence
Sensor Fusion | Human-Robot Interaction | Reinforcement Learning

Research Methods
Designing, conducting, and analyzing controlled experiments with human subjects; Qualitative data collection and analysis; Rapid prototyping

Leadership

Voting Graduate Student Member on the Chancellor's Advisory Committee on the Status of Women	2022 - 2024
Secretary for RoboGrads at UC San Diego	2022 - 2024
Panelist on USEFP STEM Careers for Women	2020
General Secretary for the Pakistan Student Association (PSA)	2018 - 2019

Academic Service

Reviewer: THRI, InGroup 2023-2024, HRI 2024-2025, Small Group Research (SGR) 2024

Student Mentoring

Graduate and Undergraduate Mentor, UC San Diego 2023 - 2024

- Priyanshu Arora (M.S. Computer Science)
- Arthi Haripriyan (M.S. Computer Science)
- Advika Sonti (B.S. Cognitive Science)

Invited Talks and Demos

InGroup 2024 Symposium, HRI 2024 Poster, InGroup 2023 Poster, UC San Diego Open House 2022-2023

Awards and Honors

Powell Fellowship	2021
J. William Fulbright Foreign Scholarship	2017