

Aaquib Tabrez

Curriculum Vitae

1111 Engineering Dr.
Boulder, Colorado
✉ mohd.tabrez@colorado.edu
🌐 <https://www.linkedin.com>



Research Interests

I work at the intersection of explainability and human-robot interaction. In my research, I leverage and enhance human-machine communication to achieve value alignment and foster appropriate trust within human-robot teams. My broader interests include Explainable AI, Reinforcement Learning, Multimodal Human-Machine Communication, and Human-AI Interaction.

Education

- 2019 – **University of Colorado, Boulder**, *Ph.D. Student, Computer Science.*
Advisor: Bradley Hayes
- 2017–2019 **University of Colorado, Boulder**, *GPA: 4.0, MS, Mechanical Engineering.*
- 2010–2014 **National Institute of Technology Karnataka, India**, *B.Tech, Mechanical Engineering.*

Awards and Recognition

- 2023 **Doctoral Consortium at AAMAS-2023.**
Selected for workshop on top early-career researchers in Multi-agent systems.
- 2022 **Robotics: Science and Systems (RSS) Pioneers.**
Selected for workshop bringing together top early career researchers in robotics.
- 2022 **Best Student Paper Award Runner-up at AAMAS.**
For the paper "Descriptive and Prescriptive Visual Guidance to Improve Shared Situational Awareness in Human-Robot Teaming".
- 2020 **IBM PhD Fellowship Finalist.**
One of three students nominated by the CS department at CU Boulder.
- 2019 **Best Paper Award Finalist for Technical Advances at ACM/IEEE HRI.**
For the paper "Explanation-based Reward Coaching to Improve Human Performance via Reinforcement Learning".
- 2019 **Human-Robot Interaction (HRI) Pioneers.**
Selected for workshop bringing together top early career researchers in HRI.
- 2019 **Awtar and Teji Singh Graduate Fellowship.**
A \$5,000 fellowship for early career PhD students demonstrating a strong academic and research record.

Journal Articles

- [paper link](#) **A survey of Mental Modeling Techniques in Human-Robot Teaming..**
Aaquib Tabrez, Matthew B. Luebbers, Bradley Hayes.
Springer-Nature Current Robotics Reports, 2020

Conference Publications

- [paper link](#) **Autonomous Justification for Enabling Explainable Decision Support in Human-Robot Teaming.**
Matthew B. Luebbers*, **Aaquib Tabrez***, Kyler Ruvane*, and Bradley Hayes.
Robotics: Science and Systems (RSS), 2023

- [paper link](#) **Descriptive and prescriptive visual guidance to improve shared situational awareness in human-robot teaming.**
Aaquib Tabrez, Matthew B. Luebbers, Bradley Hayes.
International Conference on Autonomous Agents and Multiagent Systems (AAMAS), 2022
Best Student Paper Runner-up (Top 2 of 629 submissions).
- [paper link](#) **Asking the Right Questions: Facilitating Semantic Constraint Specification for Robot Skill Learning and Repair.**
Aaquib Tabrez*, Jack Kawell*, Bradley Hayes.
IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2021
- [paper link](#) **Explanation-based Reward Coaching to Improve Human Performance via Reinforcement Learning.**
Aaquib Tabrez, Shivendra Agrawal, Bradley Hayes.
ACM/IEEE International Conference on Human Robot Interaction (HRI), 2019
Best Technical Paper Runner-up.

Workshop Publications

- [paper link](#) **Effective Human-Machine Teaming through Communicative Autonomous Agents that Explain, Coach, and Convince.**
Aaquib Tabrez, Bradley Hayes.
Doctoral Consortium at International Conference on Autonomous Agents and Multiagent Systems, 2023
- [paper link](#) **Mediating Trust and Influence in Human-Robot Interaction via Explainable AI.**
Aaquib Tabrez, Bradley Hayes.
Pioneers Workshop at Robotics: Science and Systems (RSS), 2022
- [paper link](#) **Augmented Reality-Based Explainable AI Strategies for Establishing Appropriate Reliance and Trust in Human-Robot Teaming.**
Matthew B. Luebbers*, **Aaquib Tabrez***, Bradley Hayes.
Workshop on Virtual, Augmented and Mixed Reality for Human-Robot Interaction (VAM-HRI), 2022
- [paper link](#) **Augmented Reality-Based Explainable AI Strategies for Establishing Appropriate Reliance and Trust in Human-Robot Teaming.**
Matthew B. Luebbers*, **Aaquib Tabrez***, Bradley Hayes.
Workshop on Virtual, Augmented and Mixed Reality for Human-Robot Interaction (VAM-HRI), 2022
- [paper link](#) **Solutions for Socially Intelligent HRI in Real-World Scenarios (SSIR-HRI).**
Karen Tatarian, Sera Buyukgoz, Marine Chamoux, **Aaquib Tabrez**, Bradley Hayes, Mohamed Chetouani.
Companion of the ACM/IEEE International Conference on Human-Robot Interaction, 2021
- [paper link](#) **Robot Behavior Counterfactuals for Interactive Constrained Learning from Demonstration.**
Carl Mueller, Carl Mueller, Aaquib Tabrez, Bradley Hayes
Workshop on Accessibility of Robot Programming and Work of the Future at RSS, 2021
- [paper link](#) **Emerging Autonomy Solutions for Human and Robotic Deep Space Exploration.**
Matthew B. Luebbers*, Christine T. Chang*, **Aaquib Tabrez***, Jordan Dixon*, Bradley Hayes.
SpaceCHI: Human-Computer Interaction for Space Exploration, 2021
- [paper link](#) **Automated Failure-Mode Clustering and Labeling for Informed Car-To-Driver Handover in Autonomous Vehicles.**
Aaquib Tabrez*, Matthew B. Luebbers*, Bradley Hayes.
Workshop on Assessing, Explaining, and Conveying Robot Proficiency for Human-Robot Teaming, 2020
- [paper link](#) **Improving human-robot interaction through explainable reinforcement learning.**
Aaquib Tabrez, Bradley Hayes.
Companion of the ACM/IEEE International Conference on Human-Robot Interaction, 2019