# Alexandra Bejarano

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SKILLS | Java, Python, Javascript, C++, Unity, ROS, Human-Subject Experimental Design, Qualitative Research Methods, Data Analysis, Interface Prototyping and Implementation

## EDUCATION

**Ph.D. Computer Science**                                                                      Golden, CO | Expected May 2025
Colorado School of Mines
**Teaching Assistant (TA):** *Computer Vision, Robot Ethics*
**Coursework:** *Human-Robot Interaction (HRI); Computer Vision; Human-Centered Robotics; Robot Ethics; Augmented Reality; Fundamentals of College Teaching; Social and Collaborative Computing*

**M.S. Computer Science**                                                                               Golden, CO | Dec 2022
Colorado School of Mines
**Project:** *Conducted literature review of interactions and perceptions of robot groups. Designed and completed a human-subject study exploring trust distribution among a robot group based on identity.*

**B.S. Computer Science**                                                                                  Tulsa, OK | May 2020
University of Tulsa
**Coursework:** Data Structures; Digital Systems Principles; Web Apps Development; Intro to Game Programming; Interaction Design; Software Project; Digital Art Survey & Practice

## RESEARCH EXPERIENCE

**Colorado School of Mines** | Research Assistant, MIRRORLab                    Golden, CO | Aug 2020  Present
**Advised by Dr. Tom Williams.** *Research on robot group identity performance strategies and user mental model formation in HRI. Work on design and implementation of multi-robot control interfaces.*

**University of Tulsa** | Research Assistant                                                   Tulsa, OK | Jan 2019 - Jul 2020
**Advised by Dr. Sandeep Kuttal.** *Researched remote human-human pair programming looking at gender differences, human-computer pair programming, and computer programmers online foraging behavior to inform Human-Computer Interaction technology design.*

**University of Notre Dame** | Research Assistant                    St. Joseph County, IN | May 2019 - Jul 2019
**Advised by Dr. Aaron Striegel.** *Participated in an NSF Research Experience for Undergraduates (REU) Program at the University of Notre Dame's Wireless Institute. Researched the use of network data packets and signal interference towards the development of a system in which WiFi may be used to detect tree leaves for optimal leaf pickup.*

**Oregon State University** | Research Assistant                               Corvallis, OR | May 2018 - Jul 2018
**Advised by Dr. Kagen Tumer.** *Participated in an NSF REU Program at OSU's Autonomous Agents and Distributed Intelligence Lab. Researched the use of counterfactuals in reinforcement learning to enhance the performance of intelligent agents within a simulated multiagent rover domain.*

**University of Tulsa** | Research Assistant                                               Tulsa, OK | May 2016 - Aug 2017
**Advised by Dr. Julio Diaz.** *Researched robot design for HRI through manipulation of robot appearance and a user controls interface to assist children with special needs to play.*

## PROFESSIONAL SERVICE & OUTREACH

**Mentorship** | Research Mentor to high school, undergraduate, and masters students          2021 - Present

**Trefny Graduate Teaching Fellowship** | Fellow                                                                 2023-2024
*Provided students in College Teaching Certificate Program feedback on their teaching portfolios items and course teaching based on observations. Work on a professional development project aimed at highlighting ethics discussion and broader thinking in computer science courses.* View Project

**Mines Graduate Student Government** | Director of Media and Marketing                           2023-2024

**Conferences & Journals** | Paper Reviewer                                                                          Present
*ACM CHI Conference on Human Factors in Computing Systems - 2024*
*ACM Transactions on Human-Robot Interaction - 2022, 2024*
*ACM/IEEE International Conference on Human-Robot Interaction - 2022, 2024*
*IEEE International Conference on Robot & Human Interactive Communication - 2023, 2024*
*International Journal of Social Robotics - 2022, 2024*

*ICSR Workshop HRI for Space Robotics - 2021*

**HRI Conference** | Workshop Organizer                                          2022-2024
*2024 HRI Robo-Identity 3 Workshop*
*2023 HRI Pioneers Workshop, Web/Publicity Chair*

**Summer Multicultural Engineering Training Program** | Workshop Organizer       Jun 2023
*Organized and ran interactive robot design workshops for high students in the SUMMET program.*

**Society of Hispanic Professional Engineers** | Outreach Organizer and Volunteer    2019-2023
**CSM Chapter:** *National Dia de Ciencias, assisted in STEM activity engagement with Colorado high school students - Sept 2022. Dia de Ciencias, presented on HRI to students and their families - Apr 2023.*
**TU Chapter:** *Noche Dia de Ciencias, organized STEM activities for Tulsa middle and high school students - 2019, 2020.*

## RECOGNITIONS

**Trefny Graduate Teaching Fellowship** | Fellow                          Aug 2023 - May 2024

**Roboethics Competition at ICRA 2023** | 1st Place Winning Team                  Jul 2023
*Submitted proposal on "NICE: An ethically-sensitive design framework for fetch robots in care contexts"*

**HRI Pioneers Workshop** | Selected for 2022 Cohort                          Mar 2022

**NSFGRFP** | Honorable Mention                                          Jan 2020, 2021

**Oklahoma Louis Stokes Alliance for Minority Participation (OK-LSAMP)** | Scholar  2016 - 2020

## RESEARCH PUBLICATIONS

- **Hardships in the Land of Oz: Robot Control Challenges Faced by HRI Researchers and Real-World Teleoperators** | Alexandra Bejarano, Saad Elbeleidy, Terran Mott, Sebastian Negrete-Alamillo, Luis Angel Armenta, Tom Williams
  2024 33nd IEEE International Conference on Robot and Human Interactive Communication. Read Paper

- **Degrees of Freedom: A Storytelling Game that Supports Technology Literacy about Social Robots** | Terran Mott, Mark Higger, Alexandra Bejarano, Tom Williams
  2024 33nd IEEE International Conference on Robot and Human Interactive Communication. Read Paper

- **Prototyping a User Interface for Multi-Robot Speech Control** | Alexandra Bejarano, Sebastian Negrete-Alamillo, Terran Mott, Tom Williams
  Late-Breaking Report at HRI 2024. Read Paper

- **A Gender-Controlled Replication Study on Deconstructed Trustee Theory** | Alexandra Bejarano, Tom Williams
  Workshop on Robo-Identity at HRI 2024. Read Paper

- **A Preliminary Multi-Level Service Blueprint of Robot End-User Development in Socially Assistive Robots** | Saad Elbeleidy, Alexandra Bejarano, Tom Williams
  Workshop on End-User Development at HRI 2024. Read Paper

- **No Name, No Voice, Less Trust: Robot Group Identity Performance, Entitativity, and Trust Distribution** | Alexandra Bejarano, Tom Williams
  2023 32nd IEEE International Conference on Robot and Human Interactive Communication. Read Paper

- **Conversations with Identity Performing Robots: Considerations for Algorithms and Interfaces** | Alexandra Bejarano, Sebastian Negrete-Alamillo, Tom Williams
  Workshop on Human-Robot Conversational Interaction at HRI 2023. Read Paper

- **You Had Me at Hello: The Impact of Robot Group Presentation Strategies on Mental Model Formation** | Alexandra Bejarano, Samantha Reig, Priyanka Senapati, Tom Williams
  2022 ACM/IEEE International Conference on Human-Robot Interaction. Read Paper

- **Robot Co-design Can Help Us Engage Child Stakeholders in Ethical Reflection** | Terran Mott, Alexandra Bejarano, Tom Williams
  2022 ACM/IEEE International Conference on Human-Robot Interaction. Read Paper

- **Understanding and Influencing User Mental Models of Robot Identity** | <u>Alexandra Bejarano</u>, Tom Williams
  Pioneers Workshop at HRI 2022. <u>Read Paper</u>

- **Designing for Perceived Robot Empathy for Children in Long-Term Care** | <u>Alexandra Bejarano</u>, Olivia Lomax, Peyton Scherschel, Tom Williams
  2021 International Conference on Social Robotics. <u>Read Paper</u>

- **Design, Performance, and Perception of Robot Identity** | Ryan Blake Jackson, <u>Alexandra Bejarano</u>, Katie Winkle, Tom Williams
  Workshop on Robo-Identity: Artificial identity and multi-embodiment at HRI 2021. <u>Read Paper</u>

- **On the Flexibility of Robot Social Identity Performance: Benefits, Ethical Risks and Open Research Questions for HRI** | Katie Winkle, Ryan Blake Jackson, <u>Alexandra Bejarano</u>, Tom Williams
  Workshop on Robo-Identity: Artificial identity and multi-embodiment at HRI 2021. <u>Read Paper</u>

- **How end-user programmers forage in online repositories? An information foraging perspective** | Sandeep Kuttal, Se Yeon Kim, Carlos Martos, <u>Alexandra Bejarano</u>
  2021 Journal of Computer Languages, Vol. 62. <u>Read Paper</u>

- **Cognitive Architectural Control for Free-Flying Robots on the Lunar Orbital Platform-Gateway** | Jon Emmanuel Serrano, Shania Jo Runningrabbit, Sayanti Roy, <u>Alexandra Bejarano</u>, Tom Williams
  2020 International Conference on Social Robotics. <u>Read Paper</u>

- **Identity Performance in Multi-Robot Distributed Systems** | Tom Williams, Daniel Ayers, Camille Kaufman, Jon Serrano, Shania Jo Runningrabbit, Sayanti Roy, Poulomi Pal, <u>Alexandra Bejarano</u>, Ryan Blake Jackson
  2020 International Conference on Social Robotics. <u>Read Paper</u>

- **Remote pair programming in online CS education: Investigating through a gender lens** | Sandeep Kuttal, Kevin Gerstner, <u>Alexandra Bejarano</u>
  2019 IEEE Symposium on Visual Languages and Human-Centric Computing (VL/HCC). <u>Read Paper</u>

## RESEARCH PRESENTATIONS

- **Prototyping a User Interface for Multi-Robot Speech Control** | Alexandra Bejarano, Sebastian Negrete-Alamillo, Terran Mott, Tom Williams
  Poster for HRI Late-Breaking Reports session, Mar 2024.

- **A Gender-Controlled Replication Study on Deconstructed Trustee Theory** | Alexandra Bejarano, Tom Williams
  Oral presentation at the workshop on Robo-Identity at HRI, Mar 2024.

- **No Name, No Voice, Less Trust: Robot Group Identity Performance, Entitativity, and Trust Distribution** | Alexandra Bejarano, Tom Williams
  Oral presentation at the IEEE International Conference on Robot and Human Interactive Communication, Aug 2023. Poster at the Rocky Mountain Celebration of Women in Computing, Sep 2022.

- **Interfaces and Architectural Mechanisms for Multi-Robot Control** | Alexandra Bejarano, Tom Williams
  Poster at the Distributed and Collaborative Intelligent Systems and Technology (DCIST) PI Meeting at the University of Pennsylvania, Jun 2023.

- **Conversations with Identity Performing Robots: Considerations for Algorithms and Interfaces** | Alexandra Bejarano, Sebastian Negrete-Alamillo, Tom Williams
  Oral presentation at the workshop on Human-Robot Conversational Interaction at HRI, Mar 2023.

- **You Had Me at Hello: The Impact of Robot Group Presentation Strategies on Mental Model Formation** | Alexandra Bejarano, Samantha Reig, Priyanka Senapati, Tom Williams
  Oral presentation at the ACM/IEEE International Conference on Human-Robot Interaction, Mar 2022.

- **Understanding and Influencing User Mental Models of Robot Identity** | Alexandra Bejarano, Tom Williams
  Oral presentation at the HRI Pioneers Workshop, Mar 2022.

- **Perceived Robot Empathy within Social Robot Design for Hospitalized Children** |
  Alexandra Bejarano, Olivia Lomax, Peyton Scherschel
  Poster for Computing-Mines Affiliates Partnership Program, Colorado School of Mines, 2020.

- **WiFi Leaf Detection System** | Alexandra Bejarano, Aaron Striegel
  Poster at the OK-LSAMP Research Symposium, 2019. Poster at the Summer Undergraduate Research
  Symposium (SURS), University of Notre Dame, 2019.

- **Counterfactuals in a Multiagent Domain** | Alexandra Bejarano, Connor Yates, Golden Rockefeller,
  Kagan Tumer
  Oral presentation at the National Conference on Undergraduate Research, 2019. Poster at the OK-LSAMP
  Research Symposium, 2018.

- **Robot Design for Human Interaction** | Alexandra Bejarano
  Oral presentation at the National Conference on Undergraduate Research, Edmond, Oklahoma 2018. Oral
  presentation at the OK-LSAMP Research Symposium, 2017.