

Ryan Blake Jackson

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Harvey Mudd College
Department of Computer Science

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My research area of expertise is human-robot interaction, and my specific interests include verbal noncompliance and clarification interactions, robot ethics, natural language generation (especially pragmatics), robot gender presentation, and mental models of robot identity. While I enjoy my research, my passion is teaching and mentoring students.

Education

- 2018–2022 **Ph.D. Computer Science**, Colorado School of Mines.
Advisor: Dr. Tom Williams
GPA: 4.0
- 2016–2018 **M.S. Computer Science**, Colorado School of Mines.
Advisor: Dr. Tracy Camp
GPA: 4.0
- 2012–2016 **B.A. Computer Science**, Colorado College.
Discrete Math Minor
GPA: 3.96

Teaching

- 2022 (fall) Natural Language Processing and Principles of Computer Science, Harvey Mudd College
- 2022 (spring) Natural Language Processing, Harvey Mudd College
- 2018–2019 TA and instructor for Computer Vision, Colorado School of Mines
- 2018 Instructor for Computer Science 101, Colorado School of Mines
- 2017 Instructor for Introduction to Linux, Colorado School of Mines
- 2017–2018 Made and graded midterm and final exams for Computer Simulation, Colorado School of Mines

Conference Publications

- 2023 **Analyzing the Fluency of Human-Robot Interactions.**
- Under Review Emily Weiss, Zeneve Amelie Jacotin, **Ryan Blake Jackson**, Seth G Isaacson, Gretchen Rice, Amy Yuan, and James C. Boerkoel Jr.
Submitted to the 18th ACM/IEEE International Conference on Human-Robot Interaction (HRI)

- 2022 **Norm-Breaking Responses to Sexist Abuse: A Cross-Cultural Human Robot Interaction Study.**
Katie Winkle, **Ryan Blake Jackson**, Gaspar Isaac Melsion, Drazen Brscic, Iolanda Leite, and Tom Williams
Proceedings of the 17th ACM/IEEE International Conference on Human-Robot Interaction (HRI)
- 2022 **IPOWER: Incremental, Probabilistic, Open-World Reference Resolution.**
Will Culpepper, Thomas A. Bennett, Lixiao Zhu, Rafael Sousa Silva, **Ryan Blake Jackson**, and Tom Williams
Proceedings of the 44th annual meeting of the Cognitive Science Society (COGSCI)
- 2021 **An Integrated Approach to Context-Sensitive Moral Cognition In Robot Cognitive Architectures.**
Ryan Blake Jackson, Sihui Li, Santosh Balajee Banisetty, Sriram Siva, Hao Zhang, Neil Dantam, and Tom Williams
Finalist for Best Paper Award in Cognitive Robotics
Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)
- 2020 **Exploring the Role of Gender in Perceptions of Robotic Noncompliance.**
Ryan Blake Jackson, Tom Williams, and Nicole M. Smith
Proceedings of the 15th ACM/IEEE International Conference on Human-Robot Interaction (HRI)
- 2020 **“Excuse Me, Robot”: Impact of Polite Robot Wakewords on Human-Robot Politeness.**
Tom Williams, Daniel Grollman, Mingyuan Han, **Ryan Blake Jackson**, Jane Lockshin, Ruchen Wen, Zachary Nahman, and Qin Zhu
International Conference on Social Robotics (ICSR)
- 2019 **Language-Capable Robots may Inadvertently Weaken Human Moral Norms.**
Ryan Blake Jackson and Tom Williams
Proceedings of the Companion of the 14th ACM/IEEE International Conference on Human-Robot Interaction (HRI)
- 2019 **Tact in Noncompliance: The Need for Pragmatically Apt Responses to Unethical Commands.**
Ryan Blake Jackson, Ruchen Wen, and Tom Williams
Proceedings of the AAAI/ACM Conference on Artificial Intelligence, Ethics, and Society (AIES)
- 2018 **Robot: Asker of Questions and Changer of Norms?.**
Ryan Blake Jackson and Tom Williams
Proceedings of the International Conference on Robot Ethics and Standards (ICRES)
- 2018 **A Bayesian Analysis of Moral Norm Malleability during Clarification Dialogues.**
Tom Williams, **Ryan Blake Jackson**, and Jane Lockshin
Proceedings of the 40th annual meeting of the Cognitive Science Society (COGSCI)
- 2018 **Amazon Echo Security: Machine Learning to Classify Encrypted Traffic.**
Ryan Blake Jackson and Tracy Camp
27th International Conference on Computer Communication and Networks (ICCCN)

- 2017 **Anomaly Detection in Earth Dam and Levee Passive Seismic Data Using Multivariate Gaussian.**
Wendy Fisher, **Ryan Blake Jackson**, Tracy Camp, and Valeria V. Krzhizhanovskaya
16th IEEE International Conference on Machine Learning and Applications (ICMLA)

Journal Publications

- 2022 **Enabling Morally Sensitive Robotic Clarification Requests.**
Ryan Blake Jackson and Tom Williams
ACM Transactions on Human-Robot Interaction (THRI)
- 2022 **Why and How Robots Should Say ‘No’.**
Gordon Briggs, **Ryan Blake Jackson**, Matthias Scheutz, and Tom Williams
International Journal of Social Robotics (IJSR)
- 2021 **A Theory of Social Agency for Human-Robot Interaction.**
Ryan Blake Jackson and Tom Williams
Frontiers in Robotics & AI
- 2020 **Blame-Laden Moral Rebukes and the Morally Competent Robot: A Confucian Ethical Perspective.**
Qin Zhu, Tom Williams, **Ryan Blake Jackson**, and Ruchen Wen
Science and Engineering Ethics (S&EE)

Workshop Publications

- 2022 **“I’m Not a Girl”:** The Myth of Gender Neutrality and the Nonbinary Social Robot.
Ruth Mueller, Aoi Yasuda, and **Ryan Blake Jackson**
RO-MAN Workshop on Gendering Robots: Ongoing (Re)configurations of Gender in Robotics (GenR)
- 2021 **Social Good Versus Robot Well-Being: On the Principle of Procreative Beneficence and Robot Gendering.**
Ryan Blake Jackson and Tom Williams
RO-MAN Workshop on Gendering Robots: Ongoing (Re)configurations of Gender in Robotics (GenR)
- 2021 **On the Flexibility of Robot Social Identity Performance: Benefits, Ethical Risks and Open Research Questions for HRI.**
Katie Winkle, **Ryan Blake Jackson**, Alexa Bejarano, and Tom Williams
Workshop on Robo-Identity: Artificial identity and multi-embodiment at HRI
- 2021 **Design, Performance, and Perception of Robot Identity.**
Ryan Blake Jackson, Alexa Bejarano, Katie Winkle, and Tom Williams
Workshop on Robo-Identity: Artificial identity and multi-embodiment at HRI
- 2020 **Identity Performance in Multi-Robot Distributed Systems.**
Tom Williams, Daniel Ayers, Camille Kaufman, Jon Emmanuel Serrano, Shania Jo Runningrabbit, Sayanti Roy, Poulomi Pal, Alexandra Bejarano, and **Ryan Blake Jackson**
Workshop on Human-Robot Interaction for Space Robotics at the 12th International Conference on Social Robotics (ICSR-HRI-SR)

- 2020 **Enabling Morally Sensitive Robotic Clarification Requests.**
Ryan Blake Jackson and Tom Williams
 Eighth Annual Conference on Advances in Cognitive Systems (ACS)
- 2019 **On Perceived Social and Moral Agency in Natural Language Capable Robots.**
Ryan Blake Jackson and Tom Williams
 HRI Workshop on The Dark Side of Human-Robot Interaction: Ethical Considerations and Community Guidelines for the Field of HRI
- 2019 **Towards A Role Ethics Approach to Command Rejection.**
 Ruchen Wen, **Ryan Blake Jackson**, Tom Williams, and Qin Zhu
 HRI Workshop on The Dark Side of Human-Robot Interaction: Ethical Considerations and Community Guidelines for the Field of HRI

Abstracts and Presentations

- 2019 **Generating Appropriate Responses to Inappropriate Robot Commands.**
Ryan Blake Jackson
 Proceedings of the Student Program of the 2nd AAAI/ACM Conference on Artificial Intelligence, Ethics, and Society (AIES)
- 2019 **Toward Morally Sensitive Robotic Communication.**
Ryan Blake Jackson
 Proceedings of the Human-Robot Interaction (HRI) Pioneers Workshop
- 2018 **Challenges in Responding to Malicious Robot-Directed Commands.**
Ryan Blake Jackson and Tom Williams
 Extended Abstracts of the Robotics: Science and Systems Workshop on Adversarial Robotics
- 2018 **Blame-Laden Moral Rebukes and the Morally Competent Robot: A Confucian Ethical Perspective.**
 Qin Zhu, Tom Williams, and **Ryan Blake Jackson**
 Proceedings of the Workshop on Brain-Based and Artificial Intelligence

Academic and Research Positions

- 2022–Present **Visiting Assistant Professor of Computer Science**, Harvey Mudd College.
 Conducted both human subjects and computational research with student mentees on various research questions within human-robot interaction.
- 2016–2021 **Research Assistant**, Colorado School of Mines.
 Contributed to research on various departmental grant projects and publications. Mentored several undergraduates working on various projects.
- 2016–2018 **Master’s Thesis Research**, Colorado School of Mines.
 Investigated machine learning to extract ostensibly private information from data moving between an Echo device and Amazon’s servers, despite encryption. Explored determining what type of user request is being answered by the Echo and who, of a finite set of people, is speaking to the Echo.
- Summer 2017 **Machine Learning Intern**, Ricoh Production Print Solutions LLC.
 Created a machine learning system to predict production print performance from document traits. System used by sales team to respond to customer inquiries.

2015–2016 **Senior Capstone Research Project**, Colorado College.

Performed detailed statistical analysis of multithreading context switch data from various operating systems. Presented and defended analysis to suggest kernel optimizations.

Summer 2015 **Undergraduate Researcher**, University of Illinois at Urbana-Champaign, Parallel Computing Institute.

Researched machine learning for astrophysics to determine relative velocities of galaxies and properties of dark energy. Presented technical poster summarizing research.

Honors and Awards

2022 **Rath Research Award nominee** for doctoral thesis with greatest potential for social impact

Colorado School of Mines

2021 **Graduate Student Research Award**

Colorado School of Mines, Computer Science Department

2021 **Finalist for Best Paper Award in Cognitive Robotics**

IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)

2020 **EAAI-20 New and Future AI Educator Award**

Tenth Symposium on Educational Advances in Artificial Intelligence

2020 **Best Poster**

Computing-Mines Affiliates Partnership Program (C-MAPP)

2019 **Accepted participant**

HRI Pioneers Graduate Student Consortium

2019 **Accepted participant**

AIES Graduate Student Consortium

2018 **Best Poster Runner Up**

Computing-Mines Affiliates Partnership Program (C-MAPP)

2016 **Florian Cajori Award** for outstanding mathematical prowess

Colorado College

2016 **Graduated Magna Cum Laude**

Colorado College

2016 **Departmental Distinction in Computer Science**

Colorado College

Selected Professional Service

2022 Guest editor for a special issue of the International Journal of Social Robotics

2022 Reviewer for the 10th International Conference on Human-Agent Interaction (HAI)

2022 Reviewed a chapter of the Cambridge Handbook of Moral Philosophy about moral communication

2021 Reviewer for ACM Transactions on Human-Robot Interaction (THRI)

- 2021 Proposed and ran, with colleagues, a workshop at the 30th IEEE International Conference on Robot and Human Interactive Communication (RO-MAN 2021) called "Gendering Robots (GENR): Ongoing (Re)configurations of Gender in Robotics"
- 2020 Reviewer for the 2021 HRI Pioneers Graduate Student Consortium
- 2020 Reviewer for the 2020 RSS Pioneers Doctoral Consortium
- 2020 Reviewer for the International Conference on Social Robotics (ICSR)
- 2020 Panel Chair for the Human-Robot Interaction (HRI) Pioneers Graduate Student Consortium
- 2019 Reviewer of multiple papers for the 15th ACM/IEEE International Conference on Human-Robot Interaction (HRI-2020)
- 2018–2020 Met with and evaluated faculty candidates
- 2016 Instructed educational computer science Summer camps for local elementary/middle school students
- 2016 Instructed professional development workshops for K-12 computer science educators

Student Mentees

- 2022 **Aoi Yasuda** and **Ruth Mueller** – Hired full-time for research in Summer 2022. Designed and ran experiments concerning human interactants' mental models of robots.
- 2021 **Dagney Stahl** and **Maya Maes-Johnson** – Participated in ongoing research collaborations to conduct cross-cultural replication experiments concerning robot gender presentation.
- 2020 **Aidan Naughton** – Extended research into a master's thesis and currently has a paper under review at the IEEE International Conference on Robot and Human Interactive Communication (RO-MAN).
- 2019 – 2020 **Will Culpepper** and **Torin Johnson** – Presented research at Advances in Cognitive Systems (ACS) 2020.
- 2019 – 2020 **Alexandria Leto** – Completed work on human-computer collaborative poetry earning an undergraduate research fellowship.
- 2018 – 2020 **Tommy Bennett** – Presented work at the 2020 AAAI Undergraduate Consortium and expecting a first author publication in 2021.

Student Feedback

The following are quotations from anonymous student course evaluations for my Natural Language Processing class at Harvey Mudd College in spring 2022. Of my 35 students, 11 chose to answer the free response portion of the course evaluation. I have presented the 4 responses that directly address me as an instructor below. The other responses were about specific course materials or natural language processing as a topic. Student responses are presented verbatim.

Prof. Blake was FANTASTIC — I really really hope he gets a tenure track position and ends up staying at Mudd for a long time, because he's a wonderful addition to the CS department. He explained things well, he asked for and listened to student feedback, he was excited to engage when I brought up further

questions in class or in office hours. I spent a lot of this class feeling fairly stupid (not because of the class itself! It's just been a rough semester!), and Prof. Blake was one of those incredibly rare profs who, whenever I came to his office hours with questions that I was convinced were really dumb, managed to clarify all my questions and help me make progress on the assignment all without ever once making me feel dumb. Every time I went to his office hours, I came away having made progress, understanding a lot more, and feeling smart again. That was REALLY needed for me this semester. Also, he's clearly really excited about NLP and his work, and it was so nice to have an enthusiastic prof — even on days when I wasn't 100% feeling it, it was impossible to sit down in class and not think "this is awesome" when Prof. Blake taught. And reading+discussing NLP papers in class was also really helpful and fun; I learned a lot from that!

This is one of the first classes where I felt like the discussion of ethical implications was meaningful and relevant to the current research field. Prof Blake does a really good job of leading these discussions and presents examples from his own work which make him a credible teacher on these topics.

I thought the course did a really good job of handling the major issues in NLP and extending to think about their societal implications. The presentations (both on concepts from the readings and on extensions) were useful, and Prof. Blake did a great job with explaining them. I appreciated how approachable Prof. Blake was as well, and felt that he generally put us in positions to succeed and learn. I liked how much group work was involved in the class too.

The labs and final project were perfectly clear and well designed. Blake was extremely approachable, helpful, and curious.

The following are quotations from anonymous student course evaluations for my introductory CS 101 class at Colorado School of Mines during my PhD. Although I did not create the curriculum for this course, I gave the lectures, wrote and graded the exams, held the office hours, and was generally the only instructor with whom students had any meaningful contact. Of my 56 students, 16 chose to answer the free response portion of the course evaluation. I have presented 8 of their responses below. Student responses are presented verbatim.

Blake was a fantastic instructor and always tried his best to make the class as engaging as possible. He was funny, easy to talk to, facilitated student learning, and did his best with the material he was given. The tests he wrote were fair and reflected the course material taught in class. Overall, Blake was a great instructor to have.

Lectures and Office Hours are very helpful, Blake is very committed to answering students' questions.

He was always funny and engaging. Please hire him as a future professor. He has done a great job.

Blake is awesome I really enjoyed the class and learned a lot

He is humorous and well-versed in computer science. He also focuses lectures towards the important information and will brief through the "fluff"

Overall, Blake is a pretty "rad" instructor. He explains the content well, and seems to care about the students' learning. He brings humor and a good amount of structure to the class

I really liked having Mr. Jackson as my instructor. He was funny and tried to make things more enjoyable when he knew we were kind of zoning out for the day. His teaching helped me a lot too as he would consistently stop to make sure everybody understood and didn't have any questions before moving on.

Blake Jackson was a fantastic instructor who understood the needs of the students and the goals of the class.

References

Dr. Tom Williams

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Dr. Jim Boerkoel

Harvey Mudd College
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Dr. Tracy Camp

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