

Zhao Han, Ph.D.

Assistant Professor, Bellini College of Artificial Intelligence, Cybersecurity and Computing, University of South Florida

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Research Interests

Mission: Develop preferred robot interactions and capable robotic systems powered by AI

Areas: Human-robot interaction (HRI), artificial intelligence (AI), augmented reality (AR), robotics

Expertise: Robot explainability, projector-based/head-worn AR, social robots, human-centered embodied AI, mobile manipulation, robot failures, assistive robotics, robot competition, behavior trees, robot ethics, workload, teleoperation

Education and Training

2021–2023 **Post-Doctoral Fellow, Computer Science**, Colorado School of Mines, USA

Advisor: [Tom Williams](#)

2016–2021 **Ph.D., Computer Science**, University of Massachusetts Lowell, USA

Dissertation: [Robot Explanations: Preferences, Generation, and Communication](#)

Committee: [Holly Yanco](#) (advisor, **AAAI Fellow**, **AAAS Fellow**), [Reza Ahmadzadeh](#), [Aaron Steinfeld](#) (CMU)

2014–2016 **M.S., Computer Science**, University of Manitoba, Canada

Thesis: [Delivering Scalable Frequent Pattern Mining for Non-Expert Data Miners](#)

Advisor: [Carson Leung](#), Lab: [Database and Data Mining Lab](#)

2009–2013 **B.S., Computer Science (Honours, three co-op terms)**, University of Manitoba, Canada

Area of specialization: HCI, Computer Graphics, Software Engineering, Databases and Data Mining

Employment

8/2023→ **Assistant Professor**, Bellini College of AI, Cybersecurity and Computing, University of South Florida

Lab: [Reality, Autonomy, and Robot Experience \(RARE\) Lab](#)

Highlights:

- Awarded \$411k NSF grant (lead PI; total \$737k) and \$114k internal grants (co-PI; total \$450k)
 - Five NSF grants pending (total \$4m; 3 as PI, 2 as co-PI)
- Produced 12 full papers and manuscripts (9 senior-author) and 7 workshop papers
- Conducting interdisciplinary, collaborative research with PIs in aging, hospitality, criminology, public policy, mechanical engineering, and within computer science
- Mentoring five Ph.D. students, one M.S. student, and 25 undergraduate researchers (in groups)
- Serving on organizing/program committees at top ACM/IEEE HRI and IEEE ICRA conferences

8/2021–7/2023 **Post-Doctoral Fellow**, Department of Computer Science, Colorado School of Mines

Advisor: [Tom Williams](#), Lab: [Mines Interactive Robotics Research Lab \(MIRRORLab\)](#)

Projects:

- Givenness Hierarchy Theoretic Natural Language Generation for Situated HRI
 - Collaborators: Neil T. Dantam, Hao Zhang
- Augmented Reality and Physio-Enhanced Robotic Gesture (APERTURE)
 - Collaborators: Leanne Hirshfield (Psychology), Christopher D. Wickens (Psychology)

8/2022–12/2022 **Adjunct Faculty**[†], Department of Computer Science, Colorado School of Mines

- Course: [Augmented Reality](#) (4.72/5.0 in course evaluation)

5/2018–4/2021 **Research Assistant**, Department of Computer Science, University of Massachusetts Lowell

Advisor: [Holly Yanco](#), Lab: [Human-Robot Interaction Lab](#)

Projects:

- Robotic Manipulation Assistance for Activities of Daily Living
- [FetchIt Mobile Manipulation Challenge at ICRA 2019](#)
- [Self-assessment & Understanding of Competence and Conditions to Ensure System Success](#)
 - Collaborators: Aaron Steinfeld (CMU), Henry Admoni (CMU), Jacob Crandall (BYU), Michael Goodrich (BYU), Matthias Scheutz (Tufts), Reid Simmons (CMU)

9/2016–4/2018 **Teaching Assistant**[†], *Department of Computer Science, University of Massachusetts Lowell*

5/2015–4/2016 **Marker/Teaching Assistant**[†], *Department of Computer Science, University of Manitoba, Canada*

5/2013–8/2013 **Software Developer**[‡], *Payment Processing, iQmetrix (350+ employees), Winnipeg, Canada*

9/2012–12/2012 **App. Developer**[‡], *Twitter & Facebook, BlackBerry (3500+ employees), Ottawa, Canada*

1/2012–4/2012 **App. Developer (Web, Co-op)**[‡], *Wawanesa Insurance (3000+ employees), Winnipeg, Canada*

[†]Teaching Experience is described in its own section.

[‡]Non-academia employment is detailed in the Industry Experience section.

Honors and Awards

5/1/2024 **Excellence in Mentoring Undergraduate Research Award – Faculty** (sole recipient in 2024)
University of South Florida

- In recognition of the outstanding mentorship and support to undergraduate students in their research projects, and a commitment to fostering a culture of intellectual curiosity and academic excellence at the University of South Florida

5/1/2024 **USF Certificate of HIP (High Impact Practices) Excellence** (20 recipients in 2024)
University of South Florida

- In recognition of exceptional commitment to high-impact practices in mentoring and supporting undergraduate students, while actively fostering a culture of intellectual curiosity and academic excellence at the University of South Florida

8/17/2023 **Mines Diversity, Inclusion & Access (DI&A) Award** to Mines Asian Community Alliance (8 recipients, sole faculty organization), Outstanding Campus Engagement
Colorado School of Mines

3/10/2023 **Best Late Breaking Report (LBR) Nominee** (top 5%, 7/139)
2023 ACM/IEEE International Conference on Human-Robot Interaction (HRI)

- Paper: [Towards Improved Replicability of Human Studies in Human-Robot Interaction: Recommendations for Formalized Reporting](#)

8/19/2022 **Mines Diversity, Inclusion & Access (DI&A) Award**, Creating a Culture of Inclusion – Faculty (4 recipients)
Colorado School of Mines

- Founded Mines Asian Community Alliance to foster an inclusive environment and sense of belonging
- Centralized resources for the postdoc community as a founding officer of the postdoc program

7/20/2022 **Best Long-Paper Award** (top 2%, 1/51)
2022 ACL 15th International Natural Language Generation Conference (INLG)

- Paper: [Evaluating Referring Form Selection Models In Partially-Known Environments](#)

4/4/2022 **Elected Councilor** (7/2022–6/2025), *Mathematical, Computing, and Statistical Sciences Division (MCS)*
The Council on Undergraduate Research (CUR)

3/10/2022 **Third Prize, Best Late Breaking Report (LBR) Award** (top 3%, 3/103)
2022 ACM/IEEE International Conference on Human-Robot Interaction (HRI)

- Paper: [A Task Design for Studying Referring Behaviors for Linguistic HRI](#)

6/3/2020 **Finalist (proposal writer & team lead)**
Analog Devices Real-Time Sensor Fusion Challenge, Analog Devices (ADI), FedEx, Mitsubishi Electric, SICK,

SolidWorks, and MassRobotics

- Awarded \$2,500 in seed funding
- Led 2 members (1 undergraduate) to develop tabletop projection mapping for robot intention
- Competed with Brown University, Worcester Polytechnic Institute, and startups.

5/21/2020 **First Place (proposal writer & team lead)**

Panasonic Prototype 3D LiDAR Challenge, Panasonic, Harmonic Drive, SolidWorks, and MassRobotics

- Awarded \$10,000 plus \$2,500 seed funding
- Competed with Boston University, Northeastern University, Olin College
- Led 2 team members (1 engineer) to develop small object detection from sparse LiDAR data

5/22/2019 **Second Place (team description writer & team lead)**

FetchIt! Mobile Manipulation Challenge, IEEE International Conference on Robotics and Automation (ICRA), Fetch Robotics, EandM, SCHUNK, SICK, and The Construct

- Awarded \$5,000 & LiDARs (led 2 team members vs. 10+ in the first-placed team)
- Competed with Georgia Tech & Columbia University
- Developed autonomous manipulation and navigation on Fetch for gearbox assembly kitting

Honors and Awards to Students

9/17/2025 **Thuc Anh Nguyen**, *CRA UR2PhD Research Experiences for Undergraduates (REU)*

9/16/2025 **Aarav Jain, Sofia Cobo Navas, Rex Gonzalez**, *CRA UR2PhD REU*

8/27/2025 **Aditi Singh**, *CRA UR2PhD REU*

4/2025 **Tam Do, Chi Vo**, *CRA UR2PhD REU*

3/2025 **Ridhima Phatak**, *DEI Student Pioneers, the 4th Workshop on Diversity, Equity, and Inclusion in HRI at HRI 2025*

4/2024 **Adrian Lozada**, *Accepted Participant, CRA-WP Distributed Research Experiences for Undergraduates (DREU)*

1/2024 **Hong Wang**, *2024 CRA-WP Grad Cohort for Women*

1/2024 **Uthman Tijani**, *2024 CRA-WP Grad Cohort for Inclusion, Diversity, Equity, Accessibility, and Leadership Skills (IDEALS)*

Grants

Research Grants

9/1/2025–8/31/2028 (expected) **Collaborative Research: FRR: Enabling Robots with Adaptive Projector-Based AR in Dynamic Environments**

Source: U.S. National Science Foundation (NSF), Foundational Research in Robotics (FRR)
Investigators: Zhao Han (Lead PI), Arie E. Kaufman (PI at Stony Brook University)
Role: **Lead PI**
Amount: \$411,578 (total: \$737,015)

4/25/2025–4/24/2027 (expected) **Center for Biological and Food Innovations in AI and Robotics for Children's Nutrition and Health (Bio-FAIRCH)**

Source: University of South Florida, Interdisciplinary Center Preparation Grants Full Proposal (ICPGs)
Investigators: Tingting Zhang (PI); Co-PIs: Seungbae Kim, Jing Wang, Zhao Han, Mauricio Pamplona Segundo, Raiyan Abdul Baten, Heewon Gray, Seden Dogan, Haichun Sun, Eda Alphan, Heather Agazzi, Paul Camilo Zalamea
Role: **Co-PI**
Amount: \$16,874 (total: \$300,000)

2/28/2025–2/27/2026 **USF Human-Centered AI and Robotics Consortium (USF-HARC)**

Source: University of South Florida, Multi-User Research Capital Investment Award (MuRCIA)

(expected)	<p>Investigators: Fan Yang (PI), Zhao Han, Ly Dinh, Ratna Dougherty, Amelia Anderson, Lingyao Li, Triparna De Vreede, Miyoung Chong, Redwan Alqasemi, Loni Hagen, Faizan Ali, Yu Sun, Hongdao Meng, George Burruss</p> <p>Role: Lead Co-Investigator (note: equivalent to Co-PI)</p> <p>Amount: \$97,128 (total: \$150,000)</p>
2024–2027 (expected)	<p>Center for Innovation, Technology and Aging (CITA)</p> <p>Source: University of South Florida, Collaborative Research Excellence And Translational Efforts (CREATE) Award</p> <p>Principle Investigators: Yu Sun, William Haley, Tammy Allen, and Hariom Yadav</p> <p>Role: Co-Investigator</p> <p>Amount: \$0 (total: \$1,000,000)</p>
1/2024–7/2024	<p>NSF I-Corps Site Subgrant</p> <p>Source: NSF's Innovation Corps (I-Corps) Site at the University of South Florida</p> <p>Investigator: Zhao Han (PI)</p> <p>Amount: \$3,000</p>
1/2024–5/2024	<p>Faculty Undergraduate Research Mentorship Grant</p> <p>Source: University of South Florida</p> <p>Investigator: Zhao Han (PI)</p> <p>Amount: \$2,200</p>
2019–2020	<p>Human-Aware Projection Mapping for Robot Intention</p> <p><i>ADI Real-Time Sensor Fusion Challenge, MassRobotics</i></p> <p>Source: Analog Devices (ADI), MassRobotics, FedEx, Mitsubishi Electric, SICK, and SolidWorks</p> <p>Investigators: Zhao Han (PI), Holly Yanco (Faculty Advisor), Alexander Wilkinson, Jordan Allspaw</p> <p>Amount: \$2,500</p>
2019–2020	<p>Detecting and Removing Small Ground Object Hazards with 3D LiDAR on a Mobile Manipulator</p> <p><i>Panasonic Prototype 3D LiDAR Challenge, MassRobotics</i></p> <p>Source: Panasonic, Harmonic Drive, SolidWorks, and MassRobotics</p> <p>Investigators: Zhao Han (PI), Holly Yanco (Faculty Advisor), Jordan Allspaw, Brian Flynn</p> <p>Amount: \$12,500</p>
2018–2019	<p>Mobile Multi-Task Manipulation in a Confined and Integrated Environment with Irregular Objects</p> <p><i>FetchIt! Mobile Manipulation Challenge, 2019 IEEE Int'l Conference on Robotics and Automation (ICRA)</i></p> <p>Source: Fetch Robotics, EandM, SCHUNK, SICK, and The Construct</p> <p>Investigators: Zhao Han (PI), Holly Yanco (Faculty Advisor), Jordan Allspaw</p> <p>Amount: \$5,000</p>

Other Grants

3/2025	<p>Faculty International Travel Grant</p> <p>Source: University of South Florida</p> <p>Amount: \$2,500</p>
1/2023	<p>DI&A Community Grant for MACA 2023 Lunar New Year Celebration</p> <p>Source: Colorado School of Mines, Diversity, Inclusion and Access (DI&A)</p> <p>Recipient: Mines Asian Community Alliance (MACA)</p> <p>Amount: \$1,000</p>
2021–2022	<p>Open Access Pilot Mini-Grant</p> <p>Source: Colorado School of Mines, Arthur Lakes Library</p> <p>Investigators: Zhao Han (PI), Tom Williams (Faculty Advisor)</p> <p>Amount: \$750</p>

Publications

Google Scholar: <https://scholar.google.com/citations?user=QHVdvtUAAAAJ&hl=en>

Refereed Journals

- Under review:** Hong Wang, Ridhima Phatak, James Ocampo, Zhao Han. "Indicating Robot Vision Capabilities with Augmented Reality", *International Journal on Social Robotics*. **Top HRI journal.**
- J6. **Zhao Han**, Daniel Hammer, Kevin Spevak, Mark Higger, Aaron Fanganello, Neil Thomas Dantam, Tom Williams. "Givenness Hierarchy Theoretic Sequencing of Robot Task Instructions." *Frontiers in Robotics and AI*, 12, 2025. **Top HRI journal.**
- J5. **Zhao Han**, Holly A. Yanco. "Communicating Missing Causal Information to Explain a Robot's Past Behavior." *ACM Transactions on Human-Robot Interaction (THRI)*, 12(1), 2023. **Top HRI journal.**
- J4. **Landon Brown***, **Jared Hamilton***, **Zhao Han***, **Albert Phan***, **Thao Phung***, Eric Hansen, Nhan Tran, and Tom Williams. "Best of Both Worlds? Combining Different Forms of Mixed Reality Deictic Gestures." *ACM Transactions on Human-Robot Interaction (THRI)*, 12(1), 2023. *Equal contribution. **Top HRI journal.**
- J3. **Zhao Han**, Elizabeth Phillips (**GMU, Psychology**), and Holly Yanco. "The Need for Verbal Robot Explanations and How People Would Like a Robot to Explain Itself." *ACM Transactions on Human-Robot Interaction (THRI)*, 10(4), 2021. **Top HRI journal.**
- J2. Alexander Wilkinson, Michael Gonzales, Patrick Hoey, David Kontak, Dian Wang, Noah Tormane, Amelia Sinclair, **Zhao Han**, Jordan Allspaw, Robert Platt, and Holly Yanco. "Design guidelines for human-robot interaction with assistive robot manipulation systems." *Paladyn, Journal of Behavioral Robotics*, 12(1), 2021. **Open access.**
- J1. **Zhao Han**, Daniel Giger, Jordan Allspaw, Michael S. Lee (**CMU**), Henny Admoni (**CMU**), and Holly A. Yanco. "Building The Foundation of Robot Explanation Generation Using Behavior Trees." *ACM Transactions on Human-Robot Interaction (THRI)*, 10(3), 2021. **Invited talk at Georgia Tech. Top HRI journal.**

Refereed Conference Proceedings

- Six submissions under double-blind review**, 2026 ACM/IEEE International Conference on Human-Robot Interaction (HRI). **Top HRI conference. 25% acceptance rate.**
- C19. Adrian Lozada, Uthman Tijani, Villa Keth, Hong Wang, and **Zhao Han**. "Anywhere Projected AR for Robot Communication: A Mid-Air Fog Screen-Robot System," 2025 ACM/IEEE International Conference on Human-Robot Interaction (HRI), 2025. **Top HRI conference. 25% acceptance rate.**
- C18. Gregory LeMasurier, Alvika Gautam, **Zhao Han**, Jacob Crandall, and Holly Yanco. "Reactive or Proactive? How Robots Should Explain Failures," 2024 ACM/IEEE International Conference on Human-Robot Interaction (HRI), 2024. **Top HRI conference. 24.9% acceptance rate.**
- C17. Annie Huang*, Alyson Ranucci*, Adam Stogsdill*, Grace Clark, Keenan Schott, Mark Higger, **Zhao Han**, and Tom Williams. "(Gestures Vaguely): The Effects of Robots' Use of Abstract Pointing Gestures in Large-Scale Environments," 2024 ACM/IEEE International Conference on Human-Robot Interaction (HRI), 2024. *Equal contribution. **Top HRI conference. 24.9% acceptance rate.**
- C16. Uthman Tijani, Hong Wang, and **Zhao Han**. "Towards Reproducible Language-Based HRI Experiments: Open-Sourcing a Generalized Experiment Project," 2024 ACM/IEEE International Conference on Human-Robot Interaction (HRI), 2024. **Top HRI conference. 61.3% acceptance rate (short contribution).**
- C15. **Gabriel Del Castillo***, **Grace Clark***, **Zhao Han***, and Tom Williams. "Exploring the Naturalness of Cognitive Status-Informed Referring Form Selection Models," *The 16th International Conference on Natural Language Generation (INLG)*, 2023. *Equal contribution. **Top NLG conference.**
- C14. **Zhao Han** and Tom Williams. "Evaluating Cognitive Status-Informed Referring Form Selection for Human-Robot Interactions," 2023 Annual Meeting of the Cognitive Science Society (CogSci), 2023. **Top Cognitive Science conference. 43.4% acceptance rate (380/875).**
- C13. **Zhao Han***, **Yifei Zhu***, Albert Phan, Fernando Sandoval Garza, Amia Castro, and Tom Williams. "Crossing Reality: Comparing Physical and Virtual Robot Deixis," 2023 ACM/IEEE International Conference on Human-Robot Interaction (HRI), 2023. *Equal contribution. **Top HRI conference. 25.2% acceptance rate.**
- C12. Ruchen Wen, Alyssa Hanson, **Zhao Han**, and Tom Williams. "Fresh Start: Encouraging Politeness in Wakeword-Driven Human-Robot Interaction," 2023 ACM/IEEE International Conference on Human-Robot Interaction (HRI), 2023. **Top HRI conference. 25.2% acceptance rate.**
- C11. **Kevin Spevak***, **Zhao Han***, Tom Williams, and Neil T. Dantam. "Givenness Hierarchy Informed Optimal Document Planning for Situated Human-Robot Interaction," 2022 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2022. *Equal contribution. **Top Robotics conference. 48% acceptance rate (1,740/3,579).**

- C10. **Zhao Han**, Polina Rygina and Tom Williams. “Evaluating Referring Form Selection Models in Partially-Known Environments,” *The 15th International Conference on Natural Language Generation (INLG)*, 2022. **Top NLG conference. Best Long-Paper Award.**
- C9. **Zhao Han**, Jenna Parrillo, Alexander Wilkinson, Holly A. Yanco, and Tom Williams. “Projecting Robot Navigation Paths: Hardware and Software for Projected AR,” *2022 ACM/IEEE International Conference on Human-Robot Interaction (HRI), Short Contributions (Open Science – Code Sharing)*, 2022. **Top HRI conference. 24% acceptance rate.**
- C8. Ruchen Wen, **Zhao Han** and Tom Williams. “Teacher, Teammate, Subordinate, Friend: Generating Norm Violation Responses Grounded in Role-based Relational Norms,” *2022 ACM/IEEE International Conference on Human-Robot Interaction (HRI)*, 2022. **Top HRI conference. 24% acceptance rate.**
- C7. **Zhao Han**, Adam Norton, Eric McCann, Lisa Baraniecki, Will Ober, Dave Shane, Anna Skinner, and Holly A. Yanco. “Investigation of Multiple Resource Theory Design Principles on Robot Teleoperation and Workload Management.” *2021 IEEE International Conference on Robotics and Automation (ICRA)*, 2021. **Top Robotics conference. 49% acceptance rate (1,946/4,005).**
- C6. **Tyler Frasca* (Tufts), Zhao Han***, Jordan Allspaw, Holly Yanco, and Matthias Scheutz (**Tufts**). “Going Cognitive: A Demonstration of the Utility of Task-General Cognitive Architecture for Adaptive Robotic Task Performance.” *2020 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2020. *Equal contribution. **Top Robotics conference. 47% acceptance rate (1,409/2,996).**
- C5. **Zhao Han**, Jordan Allspaw, Gregory LeMasurier, Jenna Parrillo, Daniel Giger, S. Reza Ahmadzadeh, and Holly A. Yanco. “Towards Mobile Multi-Task Manipulation in a Confined and Integrated Environment with Irregular Objects.” *2020 IEEE International Conference on Robotics and Automation (ICRA)*, 2020. **Top Robotics conference. 42% acceptance rate (1,483/3,512).**
- C4. **Zhao Han** and Holly Yanco. “The Effects of Proactive Release Behaviors During Human-Robot Handovers.” *2019 14th ACM/IEEE International Conference on Human-Robot Interaction (HRI)*, 2019. **Top HRI conference. 28% acceptance rate.**
- C3. Patrick M. J. Dubois, **Zhao Han**, Fan Jiang, and Carson K. Leung. “An Interactive Circular Visual Analytic Tool for Visualization of Web Data.” *IEEE/WIC/ACM International Conference on Web Intelligence (WI)*, 2016.
- C2. **Zhao Han** and Carson K. Leung. “FIMaaS: Scalable Frequent Itemset Mining-as-a-Service on Cloud for Non-Expert Miners.” *International Conference on Big Data Applications and Services (BigDAS)*, ACM, 2015.
- C1. Alfredo Cuzzocrea, **Zhao Han**, Fan Jiang, Carson K. Leung, and Hao Zhang. “Edge-based Mining of Frequent Subgraphs from Graph Streams.” *Procedia Computer Science 60, special issue of KES 2015*, 2015.

Refereed Workshop Papers and Extended Abstracts

- W22. Tam Do, Chi Vo, Duy Linh Ha, Felix Mendez, Suyog Bam, and **Zhao Han**. “Implementing LLM-Integrated Storytelling Robot.” *ICRA 2025 Workshop on Foundation Models and Neuro-Symbolic AI for Robotics*, 2025.
- W21. Amanuel Ergogo and **Zhao Han**. “Towards Embodied Agent Intent Explanation in Human-Robot Collaboration: ACT Error Analysis and Solution Conceptualization.” *ICRA 2025 Workshop on Human-Centered Robot Learning in the Era of Big Data and Large Models*, 2025.
- W20. Adrian Lozada, Villa Keth, Uthman Tijani, Michael Klein, and **Zhao Han**. “A Controller for Robots to Autonomously Control Fog Machine.” *2025 International Workshop on Virtual, Augmented, and Mixed-Reality for Human-Robot Interactions at HRI 2025*, 2025.
- W19. Hong Wang, Maria Julia Vidal, and **Zhao Han**. “Exploring Familiar Design Strategies to Explain Robot Vision Capabilities.” *Explainability for Human-Robot Collaboration: Real-World Concerns Workshop at HRI 2025*, 2025.
- W18. Xiangfei Kong and **Zhao Han**. “Do Results in Experiments with Virtual Robots in Augmented Reality Transfer To Physical Robots? An Experiment Design.” *4th Workshop YOUR Study Design! Participatory critique and refinement of human-robot interaction user studies (WYSD '24)*, 2024.
- W17. Hong Wang, Tam Do, and **Zhao Han**. “To Understand Indicators of Robots’ Vision Capabilities.” *2024 International Workshop on Virtual, Augmented, and Mixed-Reality for Human-Robot Interactions at HRI 2024 (VAM-HRI)*, 2024.
- W16. Hong Wang, Tam Do, and **Zhao Han**. “Designing Indicators to Show a Robot’s Physical Vision Capability.” *The 31st IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops (IEEE VRW)*, 2024.

- W15. Jiaee Cheong, Nikhil Churamani, Luke Guerdan, Tabitha Edith Lee, **Zhao Han**, and Hatice Gunes. “Causal-HRI: Causal Learning for Human-Robot Interaction.” *2024 ACM/IEEE International Conference on Human-Robot Interaction (HRI), Workshop Abstract*, 2024.
- W14. Raj Korpan*, Amy Eguchi, **Zhao Han**, Anastasia K. Ostrowski, Sindhu Ravindranath, and Ana Tanevska. “3rd Workshop on Inclusive HRI: Equity and Diversity in Design, Application, Methods, and Community.” *2024 ACM/IEEE International Conference on Human-Robot Interaction (HRI), Workshop Abstract*, 2024.
- W13. Rafael Sousa Silva, **Zhao Han**, and Tom Williams. “The Importance of Memory for Language-Capable Robots.” *XRDS: Crossroads, The ACM Magazine for Students*, 30(1), 2023.
- W12. Mark Higger, Polina Rygina, Logan Daigler, Lara Ferreira Bezerra, **Zhao Han**, and Tom Williams. “Toward Open-World Human-Robot Interaction: What Types of Gestures Are Used in Task-Based Open-World Referential Communication?” *The 27th Workshop on the Semantics and Pragmatics of Dialogue (SEMDIAL)*, 2023.
- W11. Ana Tanevska, Shruti Chandra, Giulia Barbareschi, Amy Eguchi, **Zhao Han**, Raj Korpan, Anastasia K. Ostrowski, Giulia Perugia, Sindhu Ravindranath, Katie Seaborn, and Katie Winkle. “Inclusive HRI II: Equity and Diversity in Design, Application, Methods, and Community.” *2023 ACM/IEEE International Conference on Human-Robot Interaction (HRI), Workshop Abstract*, 2023.
- W10. Shelly Bagchi, Patrick Holthaus, Gloria Beraldo, Emmanuel Senft, Daniel Hernández García, **Zhao Han**, Suresh Kumar Jayaraman, Alessandra Rossi, Connor Esterwood, Antonio Andriella, and Paul Pridham. “Towards Improved Replicability of Human Studies in Human-Robot Interaction: Recommendations for Formalized Reporting.” *2023 ACM/IEEE International Conference on Human-Robot Interaction (HRI), Late-Breaking Report (LBR)*, 2023. **Best Late Breaking Report (LBR) Nominee.**
- W9. **Zhao Han**, Tom Williams, and Holly A. Yanco. “Mixed-Reality Robot Behavior Replay: A System Implementation.” *2022 AAAI Fall Symposium on The Artificial Intelligence for Human-Robot Interaction (AI-HRI)*, 2022.
- W8. **Zhao Han** and Tom Williams. “Towards Formalizing HRI Data Collection Processes.” *The 4th Annual Workshop on Novel and Emerging Test Methods & Metrics for Effective HRI at HRI 2022*, 2022.
- W7. **Zhao Han***, **Albert Phan***, **Amia Castro***, **Fernando Sandoval Garza***, and Tom Williams. “Towards an Understanding of Physical vs Virtual Robot Appendage Design.” *2022 International Workshop on Virtual, Augmented, and Mixed-Reality for Human-Robot Interactions at HRI 2022 (VAM-HRI)*, 2022. * Equal contribution
- W6. Gregory LeMasurier, Alvika Gautam (BYU), **Zhao Han**, Jacob W. Crandall (BYU), and Holly A. Yanco. ““Why Didn’t I Do It?” A Study Design to Evaluate Robot Explanations.” *HRI 2022 Workshop YOUR study design! Participatory critique and refinement of participants’ studies*, 2022.
- W5. **Zhao Han**, Boyoung Kim (GMU, Psychology), Holly A. Yanco, and Tom Williams. “Causal Robot Communication Inspired by Observational Learning Insights.” *2022 AAAI Spring Symposium on Closing the Assessment Loop: Communicating Proficiency and Intent in Human-Robot Teaming*, 2022.
- W4. **Zhao Han** and Tom Williams. “A Task Design for Studying Referring Behaviors for Linguistic HRI.” *2022 ACM/IEEE International Conference on Human-Robot Interaction (HRI), Late-Breaking Report (LBR)*, 2022. **Third Prize, Best Late Breaking Report (LBR) Award (3/103).**
- W3. **Zhao Han**, Alexander Wilkinson, Jenna Parrillo, Jordan Allspaw, and Holly A. Yanco. “Projection Mapping Implementation: Enabling Direct Externalization of Perception Results and Action Intent to Improve Robot Explainability.” *2020 AAAI Symposium on Artificial Intelligence for Human-Robot Interaction (AI-HRI)*, 2020. **Full-length talk. Open science – code.**
- W2. **Zhao Han** and Holly A. Yanco. “Reasons People Want Explanations After Unrecoverable Pre-Handover Failures.” *2020 IEEE ICRA Workshop on Human-Robot Handovers*, 2020. **Handover community engagement.**
- W1. **Zhao Han**, Jordan Allspaw, Adam Norton, and Holly Yanco. “Towards A Robot Explanation System: A Survey and Our Approach to State Summarization, Storage and Querying, and Human Interface.” *2019 AAAI Symposium on Artificial Intelligence for Human-Robot Interaction (AI-HRI)*, 2019. **Full paper, 8 pages.**

Theses

- T2. **Zhao Han**. “Robot Explanations: Preferences, Generation, and Communication”. *Ph.D. Dissertation, University of Massachusetts Lowell, Lowell, MA*. 2021.
- T1. **Zhao Han**. “Delivering Scalable Frequent Pattern Mining for Non-Expert Data Miners”. *M.S. Thesis, University of Manitoba, Winnipeg, MB, Canada*. 2016.

Other Publications

- O5. Jivko Sinapov, **Zhao Han**, Shelly Bagchi, Muneeb Ahmad, Matteo Leonetti, Ross Mead, Reuth Mirsky, and Emmanuel Senft. "Introduction to the Special Issue on Artificial Intelligence for Human-Robot Interaction (AI-HRI)." *ACM Transactions on Human-Robot Interaction (THRI)*, 13(3), 2024.
- O4. **Zhao Han**, Emmanuel Senft, Muneeb I. Ahmad, Shelly Bagchi, Amir Yazdani, Jason R. Wilson, Boyoung Kim, Ruchen Wen, Justin W. Hart, Daniel Hernández García, Matteo Leonetti, Ross Mead, Reuth Mirsky, Ahalya Prabhakar, Megan L. Zimmerman. "Proceedings of the AI-HRI Symposium at AAAI-FSS 2022." 2022.
- O3. Reuth Mirsky, Megan Zimmerman, Muneed Ahmad, Shelly Bagchi, Felix Gervits, **Zhao Han**, Justin Hart, Daniel Hernández García, Matteo Leonetti, Ross Mead, Emmanuel Senft, Jivko Sinapov, Jason Wilson. "Proceedings of the AI-HRI Symposium at AAAI-FSS 2021." 2021.
- O2. Shelly Bagchi, Jason R. Wilson, Muneeb I. Ahmad, Christian Dondrup, **Zhao Han**, Justin W. Hart, Matteo Leonetti, Katrin Lohan, Ross Mead, Emmanuel Senft, Jivko Sinapov, and Megan L. Zimmerman. "Proceedings of the AI-HRI Symposium at AAAI-FSS 2020." 2020.
- O1. **Zhao Han** and Holly Yanco. "Investigating Human-Robot Handover Release Behaviors." *2018 New England Manipulation Symposium*, 2018. Poster.

Teaching

Courses Taught

-
- 8/2025–12/2025 (expected) **Augmented Reality** (4th year and graduate, 22 students), *University of South Florida*
-
- 1/2025–4/2025 **Software Engineering** (undergraduate, 66 students), *University of South Florida*
-
- 8/2024–12/2024 **Augmented Reality** (4th year and graduate, 28 students), *University of South Florida*
-
- 1/2024–4/2024 **Software Engineering** (undergraduate, 38 students), *University of South Florida*
- Redesigned course material: Slides, assessments, technical topic presentations, and final projects
-
- 8/2023–12/2023 **Augmented Reality** (graduate, 60 students), *University of South Florida*
- Achieved an average rating of **4.4/5.0** in course evaluation
 - Successfully taught a large class with 60 mostly international M.S. students
-
- 8/2022–12/2022 **Augmented Reality** (4th year and graduate, 30 students), *Colorado School of Mines*
- Achieved an average rating of **4.7/5.0** in course evaluation
 - Designed course description and developed learning outcomes for essential knowledge and skills
 - Developed homework to better assess learning outcomes
 - Developed evaluation and experiment design course material
-

Courses Assisted

-
- 9/2018–12/2018 Teaching Assistant, **Artificial Intelligence (4th year)**, *University of Massachusetts Lowell*
- Lectured on uninformed search algorithms
 - Went through practical questions in class, provided answer keys for midterm exam questions
-
- 1/2018–4/2018 Teaching Assistant, **Mobile Robotics I (4th year)**, *University of Massachusetts Lowell*
- Graded robot demonstrations and answered questions on the [KIPR Wallaby robot controller](#)
-
- 9/2017–12/2017 Instructor/Teaching Assistant, **Computing I Lab (1st year)**, *University of Massachusetts Lowell*
- Led labs, answered C questions, and helped students debug
-
- 1/2017–5/2017 Instructor/Teaching Assistant, **Computing II Lab (1st year)**, *University of Massachusetts Lowell*
- Led labs, answered C++ questions, and helped students debug memory-related bugs
 - Coordinated with a grader to grade assignments
-

-
- 9/2016– Teaching Assistant, **Software Architecture (3rd year)**, *University of Massachusetts Lowell*
 12/2016
- Graded assignments written in assembly language
-
- 1/2016– Marker, **Object-Orientation (2nd year)**, *University of Manitoba*
 4/2016
- Same as 5/2015 – 8/2015 except marked one Ruby assignment
 - The instructor said: “Thanks so much for being prompt this term and a good grader.”
- Teaching Assistant/Marker, **Advanced Artificial Intelligence (4th year)**, *University of Manitoba*
- Lectured: [Bayesian Reasoning](#), [Markov Chains](#), and [Rapidly Exploring Random Trees](#).
 - Graded assignments (written in Python, Java, C++), midterm and final exams
- Instructor/Teaching Assistant, **Programming Practices Lab (2nd year)**, *University of Manitoba*
- Taught 70 students for around 15 minutes in five 75-minute lab sections
 - Prepared lab material from the famous Programing Pearls book (Columns 2, 3, 5, 10)
 - Assigned lab marks based on their Unix (OS X), C (lldb, Xcode) knowledge
 - Provided feedback to the instructor after lab
-
- 9/2015– Marker, **Databases: Concepts and Usage (3rd year)**, *University of Manitoba*
 12/2015
- Provided rubrics for **100+ students’** SQL and Relational Algebra assignments
-
- 5/2015– Marker, **Object-Orientation (2nd year)**, *University of Manitoba*
 8/2015
- Provided timely and tailored feedback to 40 students who programmed in Java and C++
-

Teaching Professional Development

-
- 11/8/2024 **Workshop on Using Student Feedback to Improve Your Course**
Center for Innovative Teaching and Learning (CITL), University of South Florida
-
- 8/2023– **CITL and ODEI Book Club**
 11/2023 *Center for Innovative Teaching and Learning (CITL), University of South Florida*
-
- 8/2023– **Small Tweaks, Large Impact**
 11/2023 *Center for Innovative Teaching and Learning (CITL), University of South Florida*
- Learned six science-based strategies to enhance learning: Retrieval, Practicing, Interleaving, Self-Explaining, Learning Through Practicing, and Learning Through Connecting.
-
- 9/2022– **Course: Foundations of Course Design**
 12/2022 *Trefny Innovative Instruction Center, Colorado School of Mines*
- Synthesize your course vision, purpose, relevance, and key impacts in a course description
 - Develop course learning outcomes consistent with course key impacts and course description
 - Plan summative assessments that align with CLOs
 - Outline Pathways to Mastery that support students in mastering the learning outcomes
-

Mentoring

Ph.D. Dissertation Students (University of South Florida)

-
- 8/2025→ **Yixi Chen**. Learning human-robot collaboration and interactions.
-
- 8/2025→ **Jingjing Li**. Persuasive AI robot recipe recommender.
-
- 8/2025→ **Xiangfei Kong**. Social robot platform and older adults applications.
-
- 1/2025→ **Amanuel Ergogo**. Explanability for robot learning.
-
- 8/2023→ **Hong Wang**. Indicating a robot’s physical vision capability.
-

M.S. Thesis Students (University of South Florida)

-
- 1/2025→ **Ridhima Phatak**, M.S. in Computer Science
 Thesis topic: Protectives to mitigate robot abuse.
-

10/2023- [Xiangfei Kong](#), M.S. in Computer Science
6/2024 Thesis: [Bridging Virtual Robots and Physical Tasks via Augmented Reality](#)

Graduate Thesis Committee

10/2025→ [Maria Zapata](#), M.S. in Computer Science, University of South Florida
Major Professor: Julia Woodward

10/2024 [Tianze Chen](#), Ph.D. in Computer Science and Engineering, University of South Florida
Major Professor: Yu Sun
Title: [Robotic Multi-Object Grasping from a Pile: Techniques and Algorithms for Enhanced Dexterity](#)

7/2024 [Felipe Fronchetti](#), Ph.D. in Computer Science, **Virginia Commonwealth University**
Major Professor: Rodrigo Spínola
Title: [Exploring End-User Environments for the Control and Programming of Collaborative Robots](#)

3/2024 [Kejvi Cupa](#), M.S. in Computer Science, University of South Florida
Major Professor: Yu Sun
Title: [Automatic Image-Based Nutritional Calculator App](#)

Undergraduate Honors Thesis Chair

10/2024-9/2025 [Ashley Herbert](#). Dentists' and Patients' Perspectives of Robots.

M.S. Researchers (University of South Florida)

7/2025-10/2025 [Rishil Shah](#). Social robots for older adult companionship.

5/2025-7/2025 [Devansh Pavdighada](#). Making AI robots explainable.

8/2023-12/2024 [Uthman Tijani](#). Mid-air projection for robot communication.

Undergraduate Researchers (University of South Florida)

10/2025→ [Landon Boger](#) . Social robots for older adult companionship.

9/2025→ [Mario Sinclair](#). Social robots for older adult companionship.

9/2025→ [Ayisha Necholi](#). Social robots for older adult companionship.

9/2025→ [Jacob Rauscher](#). Fog screen device and projected augmented reality.

8/2025→ [Vidhi Mudaliar](#). Social robots for older adult companionship.

8/2025→ [Sebastian Ramirez-Vallejo](#). Social robots for older adult companionship.

8/2025→ [Deekshita Senthil Kumar](#). Social robots for older adult companionship.

8/2025→ [Sanjula Pathirana](#). Social robots for older adult companionship.

8/2025→ [Alissa Josy](#). Social robots for older adult companionship.

8/2025→ [Jasmine Kaur Kohli](#). Social robots for older adult companionship.

7/2025→ [Divyamshu Shrestha](#). Social robots for older adult companionship.

7/2025→ [Fateh Ahmad](#). Fog screen robot system.

6/2025→ [Waylon Erlandson](#). Indicating a robot's physical vision capability.

5/2025-6/2025 [Venkatesh Tapadia](#). AI-powered recipe robot recommender

5/2025-7/2025 [Lindsay Rogers](#). Making AI robots explainable.

6/2025-7/2025 [Isfahan Juboraj](#). AR virtual vs. physical robot experiment results.

5/2025→ [Sofia Cobo Navas](#). Protectives to mitigate robot abuse.

5/2025-7/2025	Andrew Texeira . Social robots for older adult companionship.
5/2025-8/2025	Deep Akbari . Social robots for older adult companionship.
5/2025→	Miguel Mateo Osorio Vela . Making AI robots explainable.
5/2025→	Rex Gonzalez . Social robots for older adult companionship.
5/2025→	Aditi Singh . AI-powered recipe robot recommender.
4/2025-8/2025	Anjali Krishna . AI-powered recipe robot recommender.
3/2025-8/2025	Thao (Jennifer) Nguyen . Indicating a robot's physical vision capability.
3/2025→	Grant Henderson . Explainability for robot learning.
3/2025→	Thuc Anh Nguyen . AR virtual vs. physical robot experiment results.
2/2025-5/2025	Gavin Wilson . Protectives to mitigate robot abuse.
2/2025-7/2025	Paramveer Singh Bhele . Protectives to mitigate robot abuse.
2/2025→	Aarav Jain . Protectives to mitigate robot abuse.
2/2025→	Abrar Zahin . Robot learning.
1/2025-4/2025	Thomveebol Phorn . Indicating robot's vision capability.
1/2025→	Ngoc Bao Dinh . In-air projection for robot communication.
1/2025-4/2025	Mariah Barreto . Protectives to mitigate robot abuse.
1/2025-4/2025	Suyog Bam . Using robots to improve college students' mental health.
1/2025-4/2025	Tan Hoang Khoa Nguyen . In-air projection for robot communication.
1/2025-4/2025	Michael Klein . In-air projection for robot communication.
1/2025→	Nicolas Echeverria . Protectives to mitigate robot abuse.
1/2025-4/2025	Tu (Tony) Nguyen . AR virtual vs. physical robot experiment results.
12/2024-7/2025	Vlad Krukhmalev . AR virtual vs. physical robot experiment results.
10/2024-9/2025	Chi Vo . Using robots to improve college students' mental health.
10/2024-4/2025	Jonathan Wong . Explainable robots by design with AR.
9/2024-4/2025	Felix Mendez . Using robots to improve college students' mental health.
9/2024-4/2025	Maria Julia Vidal . Indicating robot's vision capability.
8/2024-10/2024	Dev Thakkar . AR virtual vs. physical robot experiment results.
7/2024-1/2025	James Yab . AR virtual vs. physical robot experiment results.
5/2024-12/2024	Ridhima Phatak . Continued to MS . Indicate robot's field-of-view indicators & mitigate robot abuse.
5/2024-8/2024	Villa Keth . In-air projection for robot communication.
4/2024-8/2024	James Ocampo . Implementing robot's physical vision indicator.
1/2024-9/2024	Duy Linh (Liam) Ha . Using robots to improve college students' mental health.
1/2024-4/2025	Adrian Lozada . In-air projection for robot communication.
11/2023-9/2025	Tam (Tammy) Do . Using robots to improve college students' mental health.

Graduate Students (Colorado School of Mines)

3/2023-7/2023 Daniel (Danny) Hammer (Ph.D. student, 1st year). Evaluation of cognitive status-informed document planner.

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- 8/2022-12/2022 Mark Higger (1st year M.S. student. **Transitioned to Ph.D. in 2023.** 1 paper). Gesturing in referring form selection.
-
- 5/2022-3/2023 **Yifei (Rena) Zhu**[♀] (Ph.D. student, 1st year. 1 paper). Comparing AR robot arm with physical robot arm.
-
- 8/2021-4/2023 **Ruchen (Puck) Wen**[♀] (Ph.D. student, 3rd year to graduate). *Research and career advice.*
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Undergraduate Researchers (Colorado School of Mines)

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- 4/2023-7/2023 Aaron Fanganello. Evaluation of Cognitive Status-Informed Document Planner.
-
- 10/2022-3/2023 Keenan Schott (1 paper). Comparing deictic and non-deictic spatial gestures.
-
- 8/2022-7/2023 **Annie Huang**[♀] (1 paper). Comparing deictic and non-deictic spatial gestures.
-
- 8/2022-12/2022 Aly Ranucci[♀] (1 paper). Comparing deictic and non-deictic gestures.
Sander Schott. Gesturing in referring form selection.
Nelson Valencia. —.
Gazi Md Iftakher Morshed. —.
-
- 11/2021-4/2023 **Gabriel Del Castillo** (1 paper). Givenness Hierarchy-informed theoretic referential choice for linguistic robots.
-
- 8/2021-7/2022 **Fernando Sandoval Garza** (2 papers). Comparing AR robot arm with physical robot arm.
-
- 8/2021-5/2022 Grace Clark[♀] (2 papers). Givenness Hierarchy-informed theoretic referential choice for linguistic robots.
Amia Castro[♀] (2 papers). Eye tracking implementation in augmented reality.
Albert Phan (2 papers). Comparing virtual robot arm in augmented reality with physical robot arm.
Polina Rygina (2 papers)[♀]. Referring forms corpus collection for situated human-robot interaction.
Katherine Deal[♀]. —.
-
- 8/2021-12/2021 Aly Ranucci[♀]. Category transitions between deictic and non-deictic spatial gestures.
-

Undergraduate Researchers (UMass Lowell)

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- 2020 **Alexander Wilkinson** (3 papers – 1 journal). Projection mapping for tabletop manipulation intent.
Vittoria Santoro[♀]. Investigating physical replay to Fetch robot using MongoDB.
Yash Patel. Converting robot policy programmed in C++ to behavior trees.
-
- 5/2019-7/2021 **Jenna Parrillo**[♀] (3 papers). Near-table navigation. Projection mapping for navigation intent.
Daniel Giger (2 papers). Robot simulation. Visualize perceived & learned policies using behavior tree.
-
- 2019 **Gregory LeMasurier** (1 paper. **Started Ph.D.** in 2021). Door handle manipulation and robotics simulation.
John DeNyse. Enforcing gripper constrain in probabilistic manipulation planning.
Sanskriti Sharma[♀]. Extracting common code in the FetchIt mobile manipulation codebase.
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Mentoring Service and Professional Development

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- 11/2022-12/2022 **Program Committee Member**
AAAI 2023 Undergraduate Consortium
-
- 10/28/2022 **Poster Presentation Judge, 2022 Fall Undergraduate Research Symposium**
Colorado School of Mines
- Rated three posters on visual organization, verbal delivery, and individual sections
 - Gave feedback and encouragement to undergraduate researchers
-

10/26/2022	Workshop , “Mentorship: The Key to Success in the Academic Workspace”	
4/18/2022	Workshop : “Centering Equity and Inclusion in Undergraduate Research Mentoring.”	
4/18/2022	Poster Presentation Judge , 2022 Spring Undergraduate Research Symposium <i>Colorado School of Mines</i>	
	<ul style="list-style-type: none"> • Rated five posters on visual organization, verbal delivery, and individual sections • Gave feedback and encouragement to undergraduate researchers 	

Professional Service and Leadership

9/2025→	Associate Editor <i>2026 IEEE International Conference on Robotics and Automation (ICRA)</i>	Organization
5/2025→	Publications Co-Chair <i>2026 ACM/IEEE International Conference on Human-Robot Interaction (HRI)</i>	Organization
3/2025	Session Chair , Session 2B Teleoperation and Shared Autonomy (+ Short Contributions) <i>2025 ACM/IEEE International Conference on Human-Robot Interaction (HRI)</i>	Organization
10/2024- 11/2024	Program Committee (PC) Member (Main Track, Studies Theme) <i>2025 ACM/IEEE International Conference on Human-Robot Interaction (HRI)</i>	Program Committee
	<ul style="list-style-type: none"> • Recruiting 21 expert reviewers, writing 7 meta-reviews and 7 grand-reviews 	
6/2024	Co-Organizer <i>2024 Workshop on Affective Human-Robot Interaction, 12th International Conference on Affective Computing & Intelligent Interaction (ACII 2024)</i>	Organizer
	<ul style="list-style-type: none"> • Helped advertise call for paper, attracted 7 submissions and reviewed 2 papers 	
6/2024	Associate Editor for Late-breaking reports <i>2024 33rd IEEE International Conference on Robot and Human Interactive Communication (RO-MAN)</i>	Program Committee
	<ul style="list-style-type: none"> • Recruited 10 reviewers for five manuscripts with two for each • Meta-reviewed five manuscripts by summarizing reviews 	
5/2024	Proposal Review Panelist , Foundational Research in Robotics (FRR) <i>National Science Foundation (NSF)</i>	
	<ul style="list-style-type: none"> • Reviewed 3 grant proposals with 15-page descriptions • Attended 2-day panel meeting discussing 9 proposals with program officer and reviewers 	
9/2023- 3/2024	Co-Organizer , Workshop on “Causal-HRI: Causal Learning for Human-Robot Interaction,” <i>2024 ACM/IEEE International Conference on Human-Robot Interaction (HRI)</i>	Organizer
10/2023- 11/2023	Program Committee (PC) Member (Main Track, Studies Theme) <i>2024 ACM/IEEE International Conference on Human-Robot Interaction (HRI)</i>	Program Committee
	<ul style="list-style-type: none"> • Attended 2.5-day in-person meeting discussing over 40 papers with 6 top HRI researchers • Recruited 7 expert reviewers, meta-reviewed 4 papers, and grand-reviewed 5 papers 	
8/2023→	Guest Editor , Special Issue on Human-mediated Robot Autonomy <i>International Journal of Social Robotics</i>	Editorial
7/2023- 10/2023	Diversity and Inclusion Chair, Program Committee (PC) Member <i>2023 AAAI Fall Symposium on Artificial Intelligence for Human-Robot Interaction (AI-HRI)</i>	Program Committee Organizer
	<ul style="list-style-type: none"> • Secured 5 complimentary registrations to promote Diversity, Equity, and Inclusion • Meta-reviewed 3 submissions and discussed them during PC meeting 	
6/2023- 1/2025	Lead Topic Editor , Perceiving, Generating, and Interpreting Affect in HRI <i>Frontiers in Robotics and AI</i>	Editorial
	<ul style="list-style-type: none"> • Co-drafted research topic proposal with a list of 118 potential authors 	

6/2023– 3/2024	Publications Co-Chair <i>2024 ACM/IEEE International Conference on Human-Robot Interaction (HRI)</i>	Organization
2/2023– 9/2023	Co-Organizer <i>2023 Workshop on Affective Human-Robot Interaction, 11th International Conference on Affective Computing & Intelligent Interaction (ACII 2023)</i> <ul style="list-style-type: none"> • Co-drafted workshop proposal • Initiated a special issue (special topic collection) with Frontiers in Robotics and AI • Advertised CFP in multiple mailing lists • Hosted the workshop in person (5 keynote speakers and 8 authors) 	Organizer
9/2022– 11/2022	Program Committee (PC) Member (Main Track, Technical Theme → Studies Theme) <i>2023 ACM/IEEE International Conference on Human-Robot Interaction (HRI)</i> <ul style="list-style-type: none"> • Attended 3-day PC meeting discussing over 40 papers with 13 top HRI researchers • Recruited 16 expert reviewers, meta-reviewed 5 papers, and grand-reviewed 4 papers 	Program Committee
10/2022	Session Co-Chair , Special Session: Computational Advances in Human-Robot Interaction <i>2022 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)</i>	Organization
4/2022– 11/2022	General Co-Chair <i>2022 AAAI Fall Symposium on Artificial Intelligence for Human-Robot Interaction (AI-HRI)</i> <ul style="list-style-type: none"> • Led symposium application and discussion with 14 co-organizers on theme, topic, format, etc. • Promoted diversity by initiating DEI Chair negotiating five complimentary registrations • Initiated a Blue Sky Ideas track and attracted over 20 submissions • Co-led PC meeting and hosted the 2.5-day hybrid symposium in Washington, D.C., USA 	Organizer
3/2022– 10/2022	Co-Organizer <i>2022 Workshop on Affective Human-Robot Interaction, 10th International Conference on Affective Computing & Intelligent Interaction (ACII 2022)</i> <ul style="list-style-type: none"> • Attracted 10 submissions and participated in all aspects of workshop organization • Contacted and invited one of the speakers and hosted the early morning session 	Organizer
4/2022– 6/2022	Area Chair, Program Committee <i>2022 ACM International Conf. on Automotive UI and Interactive Vehicular Applications (AutomotiveUI)</i> <ul style="list-style-type: none"> • Recruited multiple reviewers for manuscripts in autonomous vehicles 	Program Committee
4/2022→	Elected Councilor (7/2022–6/2025), Mathematical, Computing, & Statistical Sciences Division Council on Undergraduate Research (CUR) <ul style="list-style-type: none"> • Design and implement initiatives to support and promote high-quality mentored undergraduate research, scholarship, and creative inquiry • Attend the ConnectUR conference for career development to learn, study, and master approaches to undergraduate research 	Education
2/2022– 10/2022	Lead Principal Co-Organizer , Special Session on Computational Advances in HRI <i>2022 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2022)</i> <ul style="list-style-type: none"> • Proposed & drafted an application explaining goal and themes of submitted papers • Accepted to the top-tier robotics conference with five other organizers • Attracted over 20 IROS and RA-L submissions and expanded two special sessions • Led to two papers nominated as IROS best paper awards, one per session 	Editorial Organizer
1/2022→	Standards Voting Member , P3107 – Standard Terminology for Human-Robot Interaction <i>IEEE Standards Association (IEEE SA)</i>	Policy Standards
12/2021→	Subgroup Co-Chair & Standards Voting Member , P3108 – Recommended Practice for HRI Design of Human Subject Studies <i>IEEE Standards Association (IEEE SA)</i> <ul style="list-style-type: none"> • Contributed topic coverage for HRI human-subjects study recommendations • Co-chairing subgroup 4 on Data Reporting/Release, Replicability (eight members) 	Policy Standards

12/2021- 6/2024	Guest Editor, Special Issue on Artificial Intelligence for Human-Robot Interaction ACM Transactions on Human-Robot Interaction (THRI) <ul style="list-style-type: none"> • Drafted special issue application and Call for Paper (CFP) • Communicated with journal editors to announce the CFP • Sought and assigned reviewers for submitted manuscripts • Attracted 18 submissions and wrote two meta reviews 	Editorial Organizer
4/2020- 11/2021	Co-Organizer, Program Co-Chair, Session Chair 2020 and 2021 AAAI Fall Symposium on Artificial Intelligence for Human-Robot Interaction (AI-HRI) <ul style="list-style-type: none"> • Reviewed symposium application submitted to AAAI • Helped determine program for virtual conference: breakout rooms • Chaired a paper session (Ethics/Trust) • Wrote meta-reviews, assigned reviewers, maintained website, publicized on Twitter 	Organizer
2019→	Professional Society Member <ul style="list-style-type: none"> • Association for Computing Machinery (ACM) — SIGCHI, SIGAI • Institute of Electrical and Electronics Engineers (IEEE) — Robotics and Automation Society (RAS) • Association for the Advancement of Artificial Intelligence (AAAI) • Council on Undergraduate Research (CUR) • Research Data Alliance (RDA) • National Postdoctoral Association (NPA) 	Membership

Manuscript Referee Service

Journal

- ACM Transactions on Human-Robot Interaction (**THRI**) – '21 (1), '22 (2), '23 (1), '24 (3)
- IEEE Robotics and Automation Letters (**RA-L**) – '21 (2), '22 (2), '23 (1)
- Frontiers in Robotics and AI – '22 (1)
- IEEE Transactions on Neural Systems and Rehabilitation Engineering (**TNSRE**) – '23 (1)

Conference

HRI, Robotics, AI

- ACM/IEEE International Conference on Human-Robot Interaction (**HRI**) – '22 (6), '23 (9), '24 (9)
- IEEE International Conference on Robotics and Automation (**ICRA**) – '18 (1), '19 (2), '20 (1), '21 (1), '23 (2)
- IEEE/RSJ International Conference on Intelligent Robots and Systems (**IROS**) – '22 (1), '23 (1)
- IEEE International Conference on Robot and Human Interactive Communication (**RO-MAN**) – '22 (2)
- Robotics: Science and Systems (RSS) (**RSS**) – '24 (2)
- ACM International Conference on Human-Agent Interaction (**HAI**) – '22 (1), '23 (2)
- International Conference on Ubiquitous Robots (**UR**) – '21 (1)
- ACM/IEEE International Conference on Human-Robot Interaction (**HRI**), **Short Contributions** – '21 (1), '23 (1)
- **AAAI** Conference on Artificial Intelligence – '23 (1)

HCI, AR/VR, Cognitive Science

- ACM Conference on Human Factors in Computing Systems (**CHI**) – '23 (1), '24 (4)
- ACM Conference on Human Factors in Computing Systems (**CHI**), **alt.chi** – '22 (2), '23 (1)
- IEEE International Symposium on Mixed and Augmented Reality (**ISMAR**) – '22 (1)
- IEEE Conference on Virtual Reality and 3D User Interfaces (**IEEE VR**) – '23 (2), '24 (1)
- ACM International Conference on Automotive UI and Interactive Vehicular Applications (**AutomotiveUI**) – '22 (2)
- Annual Conference of the Cognitive Science Society (**CogSci**) – '22 (1), '23 (2), '24 (2)

Symposium, Workshop, and Late-Breaking Report

- AAAI Fall Symposium on Artificial Intelligence for Human-Robot Interaction (**AI-HRI**) – '20 (5), '21 (4), '22 (2)
- ACM/IEEE International Conference on Human-Robot Interaction (**HRI**), **Late-Breaking Report** – '22 (1)
- ACM Conference on Human Factors in Computing Systems (**CHI**), **Late-Breaking Work** – '22 (5)
- International Conference on Affective Computing & Intelligent Interaction (**ACII**), **Late-Breaking Work** – '23 (1)
- Robotics: Science and Systems Conference (**RSS**), **Pioneers Workshop** – '20 (2)
- IEEE International Conference on Data Science and Advanced Analytics (**DSAA**) – '15 (1)

Institutional Service and Leadership

Spring 2026	Induction Ceremony <i>Bellini College of Artificial Intelligence, Cybersecurity and Computing, University of South Florida</i>
Fall 2025	Institutional Review Board (IRB) Committee Member <i>Bellini College of Artificial Intelligence, Cybersecurity and Computing, University of South Florida</i>
Fall 2025	Graduate Admissions Committee Member <i>Bellini College of Artificial Intelligence, Cybersecurity and Computing, University of South Florida</i>
Spring 2025→	Assistant Research Professor Search Committee Member <i>Center for Innovation, Technology, and Aging (CITA), Department of Computer Science and Engineering, University of South Florida</i>
Spring 2024	Spring Induction to the Profession Ceremony <i>College of Engineering, University of South Florida</i>
Fall 2023-Fall 2024	Graduate Admissions Committee Member <i>Department of Computer Science and Engineering, University of South Florida</i>

Diversity, Equity, and Inclusion Service and Leadership

9/2023-3/2024	Co-Organizer <i>3rd Workshop on Inclusive HRI: Equity and Diversity in Design, Application, Methods, and Community, HRI 2024</i>	Professional
8/2023→	Faculty Advisor <i>Chinese Students and Scholars Association, University of South Florida</i>	University
11/2022-3/2023	Co-Organizer <i>Inclusive HRI II: Equity and Diversity in Design, Application, Methods, and Community, HRI 2023</i> <ul style="list-style-type: none"> • Co-authored the workshop application for the 2023 edition • Hosted a morning paper session with six papers • Attracted 11 submissions and participated in all aspects of workshop organization 	Professional
8/2022-10/2022	Planning Committee Member <i>Front Range Industry & Postdoc Summit (FRIPS)</i> <ul style="list-style-type: none"> • Approached sponsors and secured one corporate sponsor • Recruited Robotics companies to attract Computer Science and Engineering postdocs 	Regional Postdoc
3/2022	Program Committee Member <i>Inclusive HRI Workshop: Equity and Diversity in Design, Application, Methods, and Community, HRI 2022</i>	Professional
3/2022-8/2023	Committee Member , Public Policy Subcommittee, <i>NPA Advocacy Committee</i> <i>National Postdoctoral Association</i> <ul style="list-style-type: none"> • Helping to improve postdoc policies in NSF documents • Advocating improving benefits and increasing salary range of postdocs 	National Postdoc
2/15/2022	Workshop Presenter , Interactive Workshop “Solidarity, Not Model Minority” <i>Celebration of DI&A Symposium, Colorado School of Mines</i> <ul style="list-style-type: none"> • Raised awareness of the history and harm of the Model Minority myth • Broke the “Not Your Model Minority” film into three digestible interactive sessions with discussions • Attracted 25+ attendees, promoting Stop Asian Hate movement as solidarity opportunity 	University
1/2022-10/2022	Planning Committee Member <i>Second Mines Community Alliances Professional Development Conference, Colorado School of Mines</i> <ul style="list-style-type: none"> • Proposed invited talks to attract the previously underrepresented faculty members, postdocs, and graduate students, ensuring all university communities are welcomed at the event 	University

11/2021- 5/2023	Founding Chair <i>Mines Asian Community Alliance, Colorado School of Mines</i>	University
	<ul style="list-style-type: none"> Established the organization to foster inclusive environment for Asian staff and faculty at Mines Coordinated with other 4 community alliances & university president to issue 3 support statements Recruited members, officers as well as exclusive sponsor from university leadership team Created a survey on the needs and interests of the membership and the university community 	
10/2021- 6/2023	Founding Officer <i>Postdoctoral Affairs and Professional Development, Colorado School of Mines</i>	University Postdoc
	<ul style="list-style-type: none"> Promoted an inclusive environment for the underrepresented postdocs as research faculty Developed resources in benefits, housing, professional development, mental health, DE&I, et al. Helped develop website with on- & off-campus resources to support incoming & current postdocs 	
9/2016- 9/2019	Vice President (2017 – 2019) & Member (2016) <i>Chinese Students & Scholars Association, University of Massachusetts Lowell</i>	University
	<ul style="list-style-type: none"> Promoted an inclusive environment for Asians & raised awareness of Chinese culture Wrote, presented, and voted on funding proposals with the Office of Multicultural Affairs monthly Coordinated and organized events for traditional Chinese & East Asian festivals (200+ attendees) Recruited new members, maintained website & online forum 	

Outreach and Engagement

6/27/2023	Interactive Workshop Presenter <i>Summer Multicultural Engineering Training (SUMMET) program, Colorado School of Mines</i>	K-12
	<ul style="list-style-type: none"> Introduced robot kinematics to 30+ high-schoolers, including underrepresented/first-generation 	
10/12/2022	Co-Presenter to Toyota Research Institute <i>Department of Computer Science, Colorado School of Mines</i>	Department
	<ul style="list-style-type: none"> Introduced 20 Toyota Research Institute employees to the lab's research in referring form selection 	
6/24/2022	Lecturer for 6-10th Grade Students (1 hour) <i>Department of Computer Science, Colorado School of Mines</i>	K-10 Department
	<ul style="list-style-type: none"> Explained the mathematical representation of robot arms Lectured the underlying math of forward and inverse kinematics to 25+ 6-10 grade students Presented a demo showing an JavaScript implementation in browser 	
5/17/2022	Co-Presenter to External Advisory Board <i>Department of Computer Science, Colorado School of Mines</i>	Department Advisory Board
	<ul style="list-style-type: none"> Introduced 10+ board members to the lab's research in AR and referring form selection 	
2/26/2022	Interactive Activity Presenter <i>"Girls Lead the Way" Conference, Colorado School of Mines</i>	K-12
	<ul style="list-style-type: none"> Introduced 30+ high school girls to math concepts & algorithms of motion planning with demo 	
11/16/2021	STEM Fair Presenter <i>Shelton Elementary Math & Science Night STEM Fair, Golden, CO</i>	K-6 STEM Fair
	<ul style="list-style-type: none"> Proposed & presented a robot arm activity for 50+ elementary students to control the arm with rviz Explained to parents about motion planning, rapidly-exploring random trees, & inverse kinematics 	
10/27/2019	Department Tour Guide <i>Department of Computer Science, University of Massachusetts Lowell</i>	K-12 Department
	<ul style="list-style-type: none"> Presented the FetchIt collaborative mobile manipulation kitting demo Explained to 80+ prospective students and their parents about this lab research platform 	
8/9/2018	Research Center Tour Guide <i>New England Robotics Validation and Experimentation (NERVE) Center, University of Massachusetts Lowell</i>	K-12 University

- Presented a robot-to-human handover demo (HRI'19 paper) to 50+ junior high school students

4/28/2018	Judge <i>Botball Educational Robotics Program</i>	K-12 Judging
	<ul style="list-style-type: none"> • Enforced scoring rules and recorded scores of robot performance at competition tables 	
1/17/2018– 1/18/2018	Technical Workshop Assistant <i>Botball Educator Workshops</i>	Teacher Workshop
	<ul style="list-style-type: none"> • Answer 20+ middle school teachers' questions on the KIPR Wallaby robot controller and C language 	

Miscellaneous

2011	Contributor , Translator, <i>KDE UserBase Wiki</i>
2009-10	Photographer , <i>The Manitoban Newspaper</i> (University student newspaper)
6/2009	Organizer Assistant , <i>Manitoba Marathon</i>

Talks

Excluding presentations of papers listed in the publications section above

12/2024	Invited Talk , "'R for Robot"—From HCI to HRI: Enabling Robots to Explain with Augmented Reality," Human-Computer Interaction class, Tampa, FL.
3/2024	Invited Talk , "Enabling Robot Explainability with AR," 7th International Workshop on Virtual, Augmented, and Mixed-Reality for Human-Robot Interactions at HRI 2024 , Boulder, CO.
1/2024	Invited Talk , "Embodied Intelligence and Collaborative Robotics," DFW Chinese IT Association (DFWITA) , Dallas, TX. (Online)
12/2023	Invited Talk . "Evaluating AI in Physical World and Coping Failures," AI Seminar, Tampa, FL.
10/2023	Invited Talk . "Independent Living Through Assistive Manipulation," Research Opportunities in AgeTech, Tampa, FL.
5/2023	Invited Talk . "Bridging The Gap Between Robots and Humans Through Explainability," IEEE Denver, University of Denver, Denver, CO.
4/2023	Invited Participant . NSF-funded "Workshop on Dialogue with Robots," University of Pittsburgh, Pittsburgh, PA.
3/2023	Invited Talk . "Bridging The Gap Between Robots and Humans Through Explainability," University of Maryland, Baltimore County (UMBC), Baltimore, MD.
3/2023	Invited Talk . "Bridging The Gap Between Robots and Humans Through Explainability," University of Texas at Dallas (UT Dallas), Dallas, TX.
2/2023	Invited Talk . "Bridging The Gap Between Robots and Humans Through Explainability," University of South Florida, Tampa, FL.
1/2023	Invited Talk . "Bridging The Gap Between Robots and Humans Through Explainability," UC Merced, Merced, CA.
3/2022	Invited Panelist . Explainability Panel, 2022 AAAI Spring Symposium on Closing the Assessment Loop: Communicating Proficiency and Intent in Human-Robot Teaming , Stanford, CA.
11/2021	Invited Talk . "State Summarization With Behavior Trees for Explanation Generation & Communicating Causal Information of Past Actions," ONR MURI Grant Annual Review, Virtual.
10/2021	Invited Talk . "Robot Explanation Generation Using Behavior Trees," Georgia Tech, Virtual.
5/2021	Invited Talk . "Robot Explanation, AR, and Multiple Resource Theory," Colorado School of Mines, Virtual.
4/2021	Invited Talk . "Robot Explanation, AR, and Multiple Resource Theory," Colorado School of Mines, Virtual.

2/2021	Lighting Talk. “Communicating Missing Information of Robots’ Past Actions,” Office of Naval Research (ONR) Multidisciplinary University Research Initiatives (MURI) Grant Student Meeting, Virtual.
8/2020	Integration Talk. Zhao Han and Michael Lee (CMU). “Using Behavior Trees to Improve Human’s Understanding of Agent Behavior;” ONR MURI Grant Annual Review, Lowell, MA.
8/2020	Integration Talk and Demo. Zhao Han and Tyler Frasca (Tufts). “Going Cognitive: A Demonstration of the Utility of Task-General Cognitive Architectures for Adaptive Robotic Task Performance,” ONR MURI Grant Annual Review, Lowell, MA.
11/2019	Lighting Talk. “Investigating Human-Robot Handover Release Behaviors,” 2018 New England Manipulation Symposium , Yale University, New Haven, CT.
9/2018	Invited Guest Lecturer. “Informed Search Algorithms,” Artificial Intelligence , UMass Lowell, Lowell, MA.
6/2018	Guest Lecturer. “Bayesian Reasoning,” “Markov Chains,” and “Rapidly Exploring Random Trees,” University of Manitoba, Winnipeg, MB, Canada.
2/2016	Guest Lecturer. “Bayesian Reasoning,” “Markov Chains,” and “Rapidly Exploring Random Trees,” University of Manitoba, Winnipeg, MB, Canada.

Media Exposure

2025	FOX 13 Tampa Bay, “ USF researchers develop AI robot tech that could save lives in emergencies ”, October 2025.
2025	USF, “ How a USF-designed robot can aid future search and rescue efforts ”, October 2025.
2021	ROS Discourse, “ ROS News for the Week of 12/13/2021 (Projecting Robot Navigation Paths) ”, December 2021.
2020	MassRobotics, “ Analog Devices Sensor Fusion Challenge ”, June 2020.
2020	MassRobotics, “ Panasonic Prototype 3D LiDAR Challenge ”, May 2020.
2019	ONR MURI SUCCESS Project, “ Annual Review Meeting 2019 ”, December 2019.
2019	ONR MURI SUCCESS Project, “ Summer 2019 Hacking and Integration ”, August 2019.
2019	UMass Lowell, “ UML 125 Years Proud ”, August, 2019
2019	Inside Logistics (Canada), “ Fetch rewards university team in manipulation challenge ”, May 2019.
2019	Bloomberg, The Associated Press, Robotics Tomorrow, Business Wire, “ Winner of Fetch Robotics FetchIt! Challenge Executes Complex Manufacturing Tasks Using Autonomous Mobile Robotic Arm ”, May 2019.
2019	Today’s Medical Developments, “ Fetch Robotics FetchIt! Mobile Manipulation Challenge winners ”, May 2019.

Industry Experience

5/2013–	Software Developer , <i>iQmetrix</i> , <i>Winnipeg, Canada</i>
8/2013	<ul style="list-style-type: none"> Involved in designing and implementing payment gateway API by integrating multiple payment providers (e.g., Avalon, Chase), consumed by retail management applications connected to POS machines Communicated with payment providers, such as Avalon, to clarify issues that existed in their payment gateway documentation Introduced the concept of aspect-oriented programming and reduced boilerplate code (cross-cutting concerns) for each API endpoint Mastered Scrum process with daily meetings, sprint planning, and story sizing Used C#, Visual Studio, Team Foundation Server (Agile project management, revision control, and code review)
9/2012–	Blackberry Software Developer , <i>Research in Motion</i> , <i>Ottawa, Canada</i>
12/2012	<ul style="list-style-type: none"> Worked on Twitter & Blackberry Messenger apps on Blackberry OS) Designed and implemented Model and Controller for compose screen. Collaborated with another co-op student who was working on UI.

- Investigated Push SDK on BBOS for registration & messages.
- Practiced multi-threaded programming to achieve faster list loading featured with auto more loading and list image loading.
- Prioritized and fixed defects, worked with the server team to clarify API issues.
- Involved in the Scrum process with daily meetings, sprint planning, and story sizing.
- Collaborated with SV&V (Software Verification & Validation) team to verify fixes.
- Used Java, Eclipse, Rally (Agile Project Management), Perforce (Revision Control), Code Collaborator (Code Review), MKS Integrity (Defect Tracking), and Jenkins (Continuous Integration).

1/2012– **Application Developer (Co-op)**, *Wawanesa Insurance, Winnipeg, Canada*

- 4/2012
- Assigned to design and develop an AJAX-based web application in an insurance broker application, allowing insurance business people to manage files and content for insurance broker portal
 - Contributed to a 12-people scrum team who rewrote and enhanced the insurance broker portal
 - Collaborated with BA (Business Analyst) to help gather and clarify business requirements and document them on SharePoint, Web Designer to help make user interface decisions, other developers to deliver shippable product increments on spring basis, and QA (Quality Assurance) to fix defects reported on a bug tracking web appl – JIRA
 - Reported status updates and provided feedback in a daily Scrum stand-up meeting
 - Used Java, Eclipse, JQuery, HTML, CSS, Struts 2 (web framework), Apache Jackrabbit (Database), Subversion (Revision Control), Spring framework (Inversion of Control), Hibernate(Object Relational Mapping), and Selenium (Browser Automation)
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Technical Background

Programming

- Proficient in: **Languages** (C++/C, Ruby, Java, Python, Scala, JavaScript, PHP, C#, R), **Robotics** (ROS, navigation, manipulation, MoveIt, perception, PCL), **Machine Learning/Deep Learning** (scikit-learn, PyTorch, WEKA), **Augmented Reality** (Unity, Vuforia), **Data Science/Data Analysis** (R, ggplot2, Frequentist/Bayesian inferential statistics), **Web** (Rack – Ruby on Rails, WordPress, HTML – Slim, CSS – Sass, ASP.NET, Struts2, web2py, Nginx, Apache HTTP Server), **Mobile** (Android, iOS – React.js, Blackberry QT), **GUI/Computer Graphics** (OpenGL, Swing, Visual C#), **Object-Oriented** Programming and Design Patterns, Test-Driven Development (JUnit, Ruby), **Multi-Threaded** Programming (Java, C++, Ruby, Python, Scala)
- Extensive knowledge of: BASH, Prolog (Logic programming)
- Course knowledge of: Perl, Assembly Language (LC-3)
- Familiar with: Spring, Hibernate, Selenium, Qt GUI framework (Blackberry 10 OS)

Databases

- Proficient in: MySQL, MongoDB, Redis, SQLite, Apache Jackrabbit
- Course knowledge of: IBM DB2, Microsoft Access, HSQLDB

Tools

- Proficient in: Operating System (Ubuntu/OS X/Linux/GNOME, Windows, iOS, Android, Blackberry OS), IDE (CLion, Eclipse, RubyMine, IntelliJ IDEA, PyCharm, Visual Studio, Netbeans, Geany RStudio.), Code Review (Code Collaborator), Revision control (Git, Perforce, CVS, SVN), Defect Tracking (MKS Integrity, JIRA), Continuous Integration (Jenkins), Text editor (Sublime, VIM, gedit, notepad++), Microsoft Office, LibreOffice, Nikon Capture NX 2, Adobe Photoshop, Adobe Dreamweaver
- Hobby knowledge of: FreeCAD, KiCAD (PCB design)