Justin W. Hart

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Professional Preparation

December 2014	Ph.D., Computer Science, Yale University Dissertation: *Robotic Self-Modeling* Committee: Brian Scassellati (Advisor), Steven W. Zucker Aaron Dollar (Mechanical Engineering), Chad Jenkins (Brown University)
May 2010	M.Phil., Computer Science, Yale University
May 2008	M.S., Computer Science, Yale University
January 2006	M.Eng., Computer Science, Cornell University
May 2001	B.S., Computer Science (Cum Laude), West Virginia University

Appointments

03/19 - 9/22	Assistant Director	Texas Robotics University of Texas at Austin
09/17 -	Assistant Professor of Practice	Department of Computer Science University of Texas at Austin
12/16 - 09/17	Postdoctoral Fellow	Department of Computer Science University of Texas at Austin
11/14 - 12/16	Postdoctoral Fellow	Department of Mechanical Engineering University of British Columbia
09/13 - 11/14	Visiting Scholar	Department of Mechanical Engineering University of British Columbia
09/06 - 12/14	Ph.D. Candidate	Department of Computer Science Yale University
06/05 - 09/06	Research Assistant	Intelligent Information Systems Institute Cornell University
12/01 - 12/04	Software Engineer	SFA, Incorporated

Teaching

- CS 309 - Autonomous Intelligent Robotics - FRI I: Spring 2018-present (Spring Semesters)
  - This course prepares students for participation in robotics research in my & Peter Stone's laboratory. Students learn C++ programming, Robot Operating System (ROS), basic OpenCV programming, and how to compute spatial transformations and use the ROS TF service. The class concludes with a final project chosen by the students and programmed on our laboratory's real robots.
- CS 378 - Autonomous Intelligent Robotics - FRI II: Fall 2017-present (Spring Semesters)
  - This is a research-based course in which students carry out semester-long research projects as teams. In 2019, I entirely reworked the class to be centered around a simulation of the

graduate school process. Students submit a project proposal at the start of the class, a "workshop paper" for the midterm, and a "conference paper" for the final. The class features a peer-review process, a "program committee meeting," a "workshop talk," and a "conference talk." Projects from this class have gone on to be published in top-tier conferences. I am very proud of how good this class is.

Other Professional Activities

Journal Editorial Boards

- Associate Editor - ACM Transactions on Human-Robot Interaction: 2021-present
- Associate Editor - Frontiers in Robotics and AI: 2020-2025

Conference Organizing

- Organizing Committee - Forum on Enhancing Service Robots for Future Homes held at the IEEE/RAS International Conference on Robotics and Automation. 2024
- General Chair - International Symposium on Trustworthy Autonomous Systems. 2024 (To be hosted at UT Austin)
- Organizing Committee - International Symposium on Technical Advances in Human-Robot Interaction. 2024
- Organizing Committee - IEEE International Conference on Development and Learning (ICDL). To be hosted at UT Austin in 2024.
- Publicity Committee - International Conference on Social Robotics (ICSR) 2023. Co-Chair.
- Organizers - Forum on Enhancing Service Robots for Future Homes: Insights and Learnings at ICRA: 2024 (Pending Approval)
- Organizing / Program Committee - AAAI Fall Symposium on Artificial Intelligence for Human-Robot Interaction (AI-HRI): 2019-present. General Co-Chair in 2019.[1]. Program Committee Chair in 2020. Program Committee Co-Chair in 2023.
- Organizing / Program Committee - AAAI Spring Symposium on Machine Learning for Mobile Robot Navigation in the Wild. March 22-24, 2021
- Organizing / Program Committee - HRI Workshop on Human Interactive Robot Learning. March 7, 2022 & March 12, 2023
- Organizing / Program Committee Co-Chair - HRI Workshop on Longitudinal Social Impacts of HRI over Long-Term Deployments. March 11, 2022
- Organizing / Program Committee Chair - HRI Workshop on Exploring Applications for Autonomous Nonverbal Human-Robot Interaction.
- Executive Committee RoboCup@Home: 2019-present[2]

[1] With Richard Freedman.
[2] Split into 3-year terms.

- Technical Committee RoboCup@Home: 2018

Program Committee Membership

- The Second Annual Trustworthy Autonomous Systems Symposium (General Co-Chair): 2024
- Association for the Advancement of Artificial Intelligence (AAAI): 2018-2024
- International Joint Conference on Artificial Intelligence (IJCAI): IJCAI 2011, 2020, Senior Program Committee - 2021, Novel Program Committee (3 year term) 2022-2024
- ACM/IEEE International Conference on Human-Robot Interaction (HRI): 2022 (PC membership is especially competitive for HRI), 2024, 2025
- RoboCup Symposium: 2018-2024. Session Chair in 2022.
- International Conference on Educational Advances in Artificial Intelligence (EAAI): 2022
- International Conference on Autonomous Agents and Multiagent Systems: 2019
- IEEE International Conference on Robotics and Automation (ICRA) - Associate Editor: 2023 (2024 conference)

Journal Reviewer

- Springer Artificial Intelligence Review: 2024
- Robotics and Automation Letters (RA-L): 2022[3]
- Robotics and Automation Letters (RA-L): 2021, 2022, 2023
- Springer Artificial Intelligence Review: 2021
- ACM Transactions on Applied Perception (TAP): 2017
- IEEE Transactions on Human-Machine Systems (THMS): 2017
- The International Journal of Human-Computer Studies (IJHCS): 2016-2018, 2022
- The International Journal of Humanoid Robotics (IJHR): 2009-2019, 2021
- Pattern Recognition letters: 2016
- ACM Transactions on Interactive Intelligent Systems (TIIS): 2014
- ASME Journal of Dynamic Systems, Measurement and Control: 2015
- Robotics and Computer Integrated Manufacturing: 2015
- Journal of Intelligent and Robotic Systems (JINT) Special Issue - Cognitive Robotics Systems: Concepts and Applications: 2014-2015
- International Journal of Robotics Research (IJRR): 2015, 2017

[3]Tracked for presentation at IEEE RAS/EMBS International Conference on Biomedical Robotics & Biomechanics (BioRob)

- Journal of Human-Robot Interaction (JHRI): 2012 (reviewed for the inaugural issue)
- International Journal of Social Robotics (SORO): 2013, 2012, 2010
- Science: Robotics: 2022
- Transactions on Human-Robot Interaction: 2018-2021 (Became an AE in 2021)
- IEEE Transactions on Human-Machine Systems: 2017
- International Journal of Human-Computer Studies: 2017-2018
- Interaction Studies: 2017
- ACM Transactions on Applied Perception: 2017

Conference Reviewer

- ACM/IEEE International Conference on Human-Robot Interaction (HRI) Pioneers Workshop (Doctoral Consortium): 2025
- IEEE Conference on Advanced Robotics and its Social Impact: 2023
- IEEE International Conference on Ubiquitous Robots: 2021
- ACM Conference on Human Factors in Computing Systems (CHI): 2016
- ACM/IEEE International Conference on Human-Robot Interaction (HRI): 2010-2016, 2018, 2021, 2023
- IEEE International Conference on Robotics and Automation (ICRA): 2022-2025
- IEEE International Symposium on Robot and Human Interactive Communication (RO-MAN): 2013, 2016, 2017, 2019, 2022, 2024
- IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS): 2009, 2012, 2017 - 2024
- ASME International Design Engineering Technical Conference & Computers and Information Engineering Conference (IDETC): 2019
- Conference on Robot Learning (CoRL): 2018-2019
- Robotics, Science, and Systems (RSS): 2016
- ICDL-Epirob (formerly ICDL and Epirob): 2012, 2013, 2015-2016
- International Conference on Development and Learning (ICDL): 2008-2010
- IEEE-RAS International Conference on Humanoid Robots (HUMANOIDS): 2009-2010
- International Conference on Epigenetic Robotics (EPIROB): 2009
- IEEE International Conference on Automatic Face and Gesture Recognition: 2014
- Association for the Advancement of Artificial Intelligence Undergraduate Consortium (AAAI-UC): 2024, 2025

- The European Conference on Artificial Intelligence (ECAI): 2006, 2024

Other Activites

- Bridging Barriers - UT Good Systems - Living and Working with Robots - Co-Director (Alongside Elliott Hauser): 2021-present
- UT Austin Ethical Artificial Intelligence Program (and graduate portfolio program) - Convergent, Responsible, and Ethical AI Training Experience for Roboticists (CREATE Roboticists) Co-PI: 2021-present
- NSF Grant Review Panelist: 2017-2019
- Texas Robotics Portfolio Seminar Organizer: 2019-Spring 2024 (Gave organization responsibilities to Michelle Garel in 2022, ran the seminar session until Spring 2024.)
- UT Austin Undergraduate Research Forum Judge: 2018-present
- UT Austin Villa @ Home RoboCup@Home Team Co-Supervisor: 2017-2019, 2022
- Texas Robotics Academy Instructor: 2018-present
- Freshman Research Initiative Summer Fellowship Reviewer: 2018-2021
- Computer Science Department Graduation Representative: 2021

Publications

Journal Articles

1. Anthony Francis, Claudia Prez-D'Arpino,Chengshu Li, Fei Xia, Alexandre Alahi, Rachid Alami, Aniket Bera, Abhijat Biswas, Joydeep Biswas, Rohan Chandra, Hao-Tien Chiang, Michael Everett, Sehoon Ha, Justin Hart, Jonathan How, Haresh Karnan, Tsang-Wei Lee, Luis Manso, Reuth Mirsky, Sren Pirk, Phani Teja Singamaneni, Peter Stone, Ada Taylor, Peter Trautman, Nathan Tsoi, Marynel Vzquez, Xuesu Xiao, Peng Xu, Naoki Yokoyama, Alexander Toshev, Roberto Martn-Martn. Principles and Guidelines for Evaluating Social Robot Navigation Algorithms. *ACM Transactions on Human-Robot Interaction (THRI)*. February 20, 2025. https://doi.org/10.1145/3700599
2. Reuth Mirsky, Xuesu Xiao, Justin Hart, and Peter Stone. Prevention and Resolution of Conflicts in Social Navigation - a Survey. *ACM Transactions on Human-Robot Interaction (THRI)*. March 11, 2024. https://doi.org/10.1145/3647983
3. Alessandra Rossi, Maike Paetzel-Prsmann, Merel Keijsers, Luca Iocchi, Daniel Polani, Oskar von Stryk, Justin Hart, and Peter Stone. The human in the loop: Perspectives and challenges for RoboCup 2050. *Autonomous Robots*. May 14, 2024.
4. Haresh Karnan, Anirudh Nair, Xuesu Xiao, Garrett Warnell, Soren Pirk, Alexander Toshev, Justin Hart, Joydeep Biswas, and Peter Stone. Socially CompliAnt Navigation Dataset (SCAND): A Large-Scale Dataset Of Demonstrations For Social Navigation. In *IEEE Robotics and Automation Letters*. vol 7(4). pp. 11807 - 11814 *(Presented at IROS 2022)*.

5. Jesse Thomason, Aishwarya Padmakumar, Jivko Sinapov, Nick Walker, Yuqian Jiang, Harel Yedidsion, Justin Hart, Peter Stone, and Raymond Mooney. Jointly improving parsing and perception for natural language commands through human-robot dialog. In *Journal of Artificial Intelligence Research*. vol. 67. pp. 327-374. February 2, 2020.

6. Wilma A. Bainbridge, Justin W. Hart, Eli S. Kim, and Brian Scassellati. (2010) The Benefits of Interactions with Physically Present Robots Over Video-Displayed Agents. *International Journal of Social Robotics*. vol. 3(1), pp. 41 - 52. October, 16, 2010.

Conference Papers

1. Nicholas Verzic, Abhinav Chadaga, Justin Hart. Recovering Missed Detections in an Elevator Button Segmentation Task. In *Proceedings of the IEEE/RSJ International Conference on Robots and Intelligent Systems (IROS)*. Abu Dhabi, United Arab Emirates. October 14-18, 2024.

2. Elliott Hauser, Yao-Cheng Chan, Sadanand Modak, Joydeep Biswas, Justin Hart. Vid2Real HRI: Align video-based HRI study designs with real-world settings. In *Proceedings of the IEEE RAS International Conference on Robot and Human Interactive Communication (RO-MAN)*. Pasadena, California, USA. August 26-30, 2024.

3. Carson Stark, Bohkyung Chun, Casey Charleston, Varsha Ravi, Luis Pabon, Surya Sunkari, Tarun Mohan, Peter Stone, Justin Hart. Dobby: A Conversational Service Robot Driven by GPT-4. In *Proceedings of the IEEE RAS International Conference on Robot and Human Interactive Communication (RO-MAN)*. Pasadena, California, USA. August 26-30, 2024.

4. Elliott Hauser, Yao-Cheng Chan, Ruchi Bhalani, Alekhya Kuchimanchi, Hanaa Siddiqui, Justin Hart. Influencing Incidental Human-Robot Encounters: Expressive movement improves pedestrians' impressions of a quadruped service robot. In *Proceedings of the Hawaii International Conference on System Sciences (HICSS)*. Waikiki, Hawaii, USA. January 3-6, 2024.

5. Emily Norman, Keri K. Stephens, Samantha Shorey, Joydeep Biswas, Justin Hart, Elliott Hauser, Luis Sentis. Bringing Training, Learning, and Development into Team Science: Effectively Freeing Team Members from Disciplinary Barriers in Research. In *2023 National Communication Association 109th Annual Convention "Freedom"*. National Harbor, Maryland, USA. November 17, 2023. (Awarded as "Top Papers")

6. Haresh Karnan*, Anirudh Nair, Xuesu Xiao, Garrett Warnell, Soren Pirk, Alexander Toshev, Justin Hart, Joydeep Biswas, Peter Stone. Socially CompliAnt Navigation Dataset (SCAND): A Large-Scale Dataset Of Demonstrations For Social Navigation. In *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*. Kyoto, Japan. October 23-27, 2022. (RA-L paper presented at IROS)

7. Blake Holman, Abrar Anwar, Akash Singh, Mauricio Tec, Justin Hart, and Peter Stone. Watch Where You're Going! Gaze and Head Orientation as Predictors for Social Robot Navigation. In *Proceedings of the IEEE International Conference on Robotics and Automation (ICRA)*. Xi'an, China. May 30 - June 5, 2021.

8. Rishi Shah, Yuqian Jiang, Justin Hart, and Peter Stone. Deep R-Learning for Continual Area Sweeping. In *Proceedings of the International Conference on Robotics and Intelligent Systems (IROS)*. Las Vegas, Nevada. October 25-29, 2020.

9. Justin Hart, Reuth Mirsky, Xuesu Xiao, Stone Tejeda, Bonny Mahajan, Jamin Goo, Kathryn Baldauf, Sydney Owen, and Peter Stone. Using Human-Inspired Signals to Disambiguate Navigational Intentions. In *Proceedings of the International Conference on Social Robotics (ICSR)*. Golden, Colorado. November 14-16, 2020.

10. Yuqian Jiang, Nick Walker, Justin Hart, and Peter Stone. Open-World Reasoning for Service Robots. In *Proceedings of the International Conference in Automated Planning and Scheduling (ICAPS)*. Berkeley, California. July 13-15, 2019.

11. Jesse Thomason, Aishwarya Padmakumar, Jivko Sinapov, Nick Walker, Yuqian Jiang, Harel Yedidsion, Justin Hart, Peter Stone, and Raymond J. Mooney. Improving Grounded Natural Language Understanding through Human-Robot Dialog. In *Proceedings of the International Conference on Robotics and Automation (ICRA)*. Montreal, Quebec, Canada. May 20-24, 2019.

12. Harel Yedidsion, Jacqueline Deans, Connor Sheehan, Mahathi Chillara, Justin Hart, Peter Stone, and Raymond J. Mooney. Optimal Use Of Verbal Instructions For Multi-Robot Human Navigation Guidance. In *Proceedings of the Eleventh International Conference on Social Robotics (ICSR)*. Madrid, Spain. November 26-29, 2019.

13. Rolando Fernandez, Nathan John, Sean Kirmani, Justin Hart, Jivko Sinapov, and Peter Stone. Passive Demonstrations of Light-Based Robot Signals for Improved Human Interpretability. In *Proceedings of the IEEE International Symposium on Robot and Human Interactive Communication (RO-MAN)*. Nanjing, China. August 27-31, 2018.

14. Justin Hart, Rishi Shah, Sean Kirmani, Nick Walker, Kathryn Baldauf, Nathan John, and Peter Stone. PRISM: Pose Registration for Integrated Semantic Mapping. In *Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*. Madrid, Spain. October 1-5, 2018.

15. Jesse Thomason, Aishwarya Padmakumar, Jivko Sinapov, Justin Hart, Peter Stone, and Raymond J. Mooney. Opportunistic Active Learning for Grounding Natural Language Descriptions. In *Proceedings of the 1st Annual Conference on Robot Learning (CoRL)*. Mountain View, California. November 13-15, 2017.

16. Justin Hart and Brian Scassellati. Mirror Perspective-Taking with a Humanoid Robot. In *Proceedings of the AAAI Conference on Artificial Intelligence (AAAI)*. Toronto, Canada. July 22-26, 2012.

17. Justin W. Hart and Brian Scassellati. A Robotic Model of the Ecological Self. In *Proceedings of the IEEE-RAS International Conference on Humanoid Robots (HUMANOIDS)*. Bled, Slovenia. October 26-28, 2011.

18. Eleanor Avrunin, Justin Hart, Ashley Douglas, and Brian Scassellati. Effects Related to Synchrony and Repertoire in Perceptions of Robot Dance. In *Proceedings of the ACM/IEEE International Conference on Human-Robot Interaction (HRI)*. Lausanne, Switzerland. March 6-9, 2011.

19. Elaine Short, Justin Hart, Michelle Vu, and Brian Scassellati. No Fair!! An Interaction with a Cheating Robot. In *Proceeding of the ACM/IEEE International Conference on Human-Robot Interaction (HRI)*. Osaka, Japan. March 2-5, 2010. **(Nominated for best paper award)**.

20. Wilma A. Bainbridge, Justin Hart, Eli S. Kim, and Brian Scassellati. The Effect of Presence on Human-Robot Interaction. In *Proceedings of the IEEE International Symposium on Robot and Human Interactive Communication (ROMAN)*. Munich, Germany. August 1-3, 2008.

21. Ashish Sabharwal, Carlos Ansotegui, Carla P. Gomes, Justin Hart, and Bart Selman. QBF Modeling: Exploiting Player Symmetry for Simplicity and Efficiency. In *Proceedings of the International Conference on Theory and Applications of Satisfiability Testing (SAT)*. Seattle, WA, August 12-15, 2006.

Workshop Papers

1. Elliott Hauser, Justin Hart, Samuel Baker, Luis Sentis. Embedding spatiotemporal context for conversations with autonomous mobile robots. In *Proceedings of the HRI Workshop on Human-Robot Conversational Interaction*. Stockholm, Sweden. March 13, 2023.

2. Haresh Karnan, Anirudh Nair, Xuesu Xiao, Garrett Warnell, Soren Pirk, Alexander Toshev, Justin Hart, Joydeep Biswas, and Peter Stone. Socially CompliAnt Navigation Dataset (SCAND): A Large-Scale Dataset Of Demonstrations For Social Navigation. (Extended Abstract) In *Proceedings of the ICRA Workshop on Social Robot Navigation: Advances and Evaluation*. Philadelpha, Pennsylvania. May 27, 2022.

3. Parth Chonkar, Geethika Hemkumar, Huihai Wang, Daksh Dua, Shikhar Gupta, Yao-Cheng Chan, Justin Hart, Elliott Hauser, Reuth Mirsky, Joydeep Biswas, Junfeng Jiao, and Peter Stone. Look to my Lead: How Does a Leash Affect Perceptions of a Quadruped Robot? In *Proceedings of the ICRA Workshop on Social Robot Navigation: Advances and Evaluation*. Philadelpha, Pennsylvania. May 27, 2022.

4. Justin Hart, Reuth Mirsky, Xuesu Xiao, and Peter Stone. Incorporating Gaze into Social Navigation. In *Proceedings of the Robotics: Science and Systems Workshop on Social Robot Navigation*. Virtual, July 13, 2021.

5. Justin Hart, Sara Sheikholeslami, Matthew K. X. J. Pan, Wesley P. Chan, and Elizabeth A. Croft. Predictions of Human Task Performance and Handover Trajectories for Human-Robot Interaction. In *Proceedings of the HRI 2015 Workshop on Human-Robot Teaming*. Portland, Oregon. March 2-5, 2015.

6. Justin Hart, Brian Gleeson, Matthew K. X. J. Pan, AJung Moon, Karon MacLean, and Elizabeth A. Croft. Gesture, Gaze, Touch, and Hesitation: Timing Cues for Collaborative Work. In *Proceedings of the HRI Workshop on Timing in Human-Robot Interaction 2014*. Bielefeld, Germany. March 3-6, 2014.

7. Justin Hart and Brian Scassellati. Robotic Self-Models Inspired by Human Development. In *Proceedings of the AAAI-10 Workshop on Metacognition for Robust Social Systems*. Atlanta, Georgia. July 11, 2010.

8. Justin Hart, Brian Scassellati, and Steven W. Zucker. Epipolar Geometry for Humanoid Robotic Heads. In *Proceedings of the 4th International Cognitive Vision Workshop*. Santorini, Greece. May 12, 2008.

Symposium Papers

1. Samuel Baker, Elliott Hauser and Justin Hart. Trustworthy Memory Practices for Better Living and Working with Robots. In *Proceedings of the First International Symposium on Trustworthy Autonomous Systems*. Edinburgh, UK, July 11-12, 2023.

2. Elliott Hauser, Yao-Cheng Chan, Geethika Hemkumar, Daksh Dua, Parth Chonkar, Efren Mendoza Enriquez, Tiffany Kao, Shikhar Gupta, Huihai Wang, Justin Hart, Reuth Mirsky, Joydeep Biswas, Junfeng Jiao and Peter Stone. "Whats That Robot Doing Here?": Factors Influencing Perceptions Of Incidental Encounters With Autonomous Quadruped Robots. In *Proceedings of the First International Symposium on Trustworthy Autonomous Systems.* Edinburgh, UK, July 11-12, 2023.

3. Anthony Francis, Claudia Perez-D'Arpino, Chengshu Li, Fei Xia, Alexandre Alahi, Aniket Bera, Abhijat Biswas, Joydeep Biswas, Hao-Tien Lewis Chiang, Michael Everett, Sehoon Ha, Justin Hart, Haresh Karnan, Tsang-Wei Edward Lee, Luis Manso, Reuth Mirsky, Soren Pirk, Phani Teja Singamaneni, Peter Stone, Ada Taylor, Peter Trautman, Nathan Tsoi, Marynel Vazquez, Xuesu Xiao, Peng Xu, Naoki Yokoyama, Roberto Martin-Martin, Alexander Toshev. Benchmarking Social Robot Navigation Across Academia and Industry. In *Proceedings of the AAAI Spring Symposium on HRI in Academia and Industry: Bridging the Gap.* AAAI Spring Symposium Series. Palo Alto, California, USA, March 27-29, 2023.

4. Yao-Cheng Chan, Justin Hart, and Elliott Hauser. Understanding Human-Robot Encounters: Challenges for Industry and Science. In *Proceedings of the AAAI Spring Symposium on HRI in Academia and Industry: Bridging the Gap.* AAAI Spring Symposium Series. Palo Alto, California, USA, March 27-29, 2023.

5. Minkyu Kim, Miguel Arduengo, Nick Walker, Yuqian Jiang, Justin Hart, Peter Stone, and Luis Sentis. Active Target Search for Autonomous Person Following. In *Proceedings of the AAAI Spring Symposium on Machine Learning for Mobile Robot Navigation in the Wild.* AAAI Spring Symposium Series. Palo Alto, California, USA, March 22-24, 2021.

6. David Balaban, Harshavardhan Jagannathan, Henry Liu, and Justin Hart, Efficient Placard Discovery for Semantic Mapping During Frontier Exploration. In *Proceedings of the AAAI Spring Symposium on Machine Learning for Mobile Robot Navigation in the Wild.* AAAI Spring Symposium Series. Palo Alto, California, USA, March 22-24, 2021.

7. Asha Kailin Jain, Maxwell Svetlik, Nicholas Machak, Kavan Singh Sikand, Cem Karamanli, Kaiyu Zhou, Justin Hart, Joydeep Biswas, Luis Sentis, Junfeng Jiao. An Open-Source Framework for Last Mile Delivery with Heterogeneous Robots. In *Proceedings of the AAAI Spring Symposium on Machine Learning for Mobile Robot Navigation in the Wild.* AAAI Spring Symposium Series. Palo Alto, California. March 22-24, 2021.

8. Rishi Shah, Yuqian Jiang, Haresh Karnan, Gilberto Briscoe-Martinez, Dominick Mulder, Ryan Gupta, Rachel Schlossman, Marika Murphy, Justin Hart, Luis Sentis, Peter Stone. Solving Service Robot Tasks: UT Austin Villa @ Home 2019 Team Report. In *Proceedings of Artificial Intelligence for Human-Robot Interaction Symposium (AI-HRI).* AAAI Fall Symposium Series. Arlington, Virginia. November 7-9, 2019.

9. Justin Hart, Reuth Mirsky, Stone Tejeda, Bonny Mahajan, Jamin Goo, Kathryn Baldauf, Sydney Owen, Peter Stone. Unclogging Our Arteries: Using Human-Inspired Signals to Disambiguate Navigational Intentions. In *Proceedings of Artificial Intelligence for Human-Robot Interaction Symposium (AI-HRI).* AAAI Fall Symposium Series. Arlington, Virginia. November 7-9, 2019.

10. Yuqian Jiang, Nick Walker, Minkyu Kim, Nicolas Brissonneau, Daniel S. Brown, Justin Hart, Scott Niekum, Luis Sentis, and Peter Stone. LAAIR: A Layered Architecture for Autonomous

Interactive Robots. In *Proceedings of the Reasoning and Learning in Real-World Systems for Long-Term Autonomy (LTA) symposium*, AAAI Fall Symposium Series. Arlington, Virginia. October 18-20, 2018.

11. Justin Hart, Harel Yedidsion, Yuqian Jiang, Nick Walker, Rishi Shah, Jesse Thomason, Aishwarya Padmakumar, Rolando Fernandez, Jivko Sinapov, Raymond Mooney, Peter Stone. Interaction and Autonomy in RoboCup@Home and Building-Wide Intelligence. In *Proceedings of the Artificial Intelligence (AI) for Human-Robot Interaction (HRI) symposium (AI-HRI)*. AAAI Fall Symposium Series. Arlington, Virginia. October 18-20, 2018.

Pre-Prints

1. Elliott Hauser, Yao-Cheng Chan, Sadanand Modak, Joydeep Biswas, Justin Hart. Vid2Real HRI: Align video-based HRI study designs with real-world settings. In *arXiv preprint arXiv:2403.15798* . March 23, 2024.

2. Elliott Hauser, Yao-Cheng Chan, Ruchi Bhalani, Alekhya Kuchimanchi, Hanaa Siddiqui, Justin Hart. Influencing Incidental Human-Robot Encounters: Expressive movement improves pedestrians' impressions of a quadruped service robot. In *arXiv preprint arXiv:2311.04454*. November 8, 2023.

3. Carson Stark, Bohkyung Chun, Casey Charleston, Varsha Ravi, Luis Pabon, Surya Sunkari, Tarun Mohan, Peter Stone, Justin Hart. Dobby: A Conversational Service Robot Driven by GPT-4. In *arXiv preprint arXiv:2310.06303*. October 10, 2023.

4. David Balaban, Justin Medich, Pranay Gosar, Justin Hart. Propagating Semantic Labels in Video Data. In *arXiv preprint arXiv:2310.00783*. October 1, 2023.

5. Hugo Latapie, Shan Yu, Patrick Hammer, Kristinn R. Thorisson, Vahagn Petrosyan, Brandon Kynoch, Alind Khare, Payman Behnam, Alexey Tumanov, Aksheit Saxena, Anish Aralikatti, Hanning Chen, Mohsen Imani, Mike Archbold, Tangrui Li, Pei Wang, Justin Hart. Ethosight: A Reasoning-Guided Iterative Learning System for Nuanced Perception based on Joint-Embedding Contextual Label Affinity. In *arXiv preprint arXiv:2307.10577*. July 20, 2023.

6. Anthony Francis, Claudia Perez-D'Arpino, Chengshu Li, Fei Xia, Alexandre Alahi, Rachid Alami, Aniket Bera, Abhijat Biswas, Joydeep Biswas, Rohan Chandra, Hao-Tien Lewis Chiang, Michael Everett, Sehoon Ha, Justin Hart, Jonathan P How, Haresh Karnan, Tsang-Wei Edward Lee, Luis J Manso, Reuth Mirksy, Soeren Pirk, Phani Teja Singamaneni, Peter Stone, Ada V Taylor, Peter Trautman, Nathan Tsoi, Marynel Vazquez, Xuesu Xiao, Peng Xu, Naoki Yokoyama, Alexander Toshev, Roberto Martin-Martin. Principles and Guidelines for Evaluating Social Robot Navigation Algorithms. *arXiv preprint arXiv:2306.16740*. June 29, 2023.

7. David Balaban, Justin Hart. Automatic Sign Reading and Localization for Semantic Mapping with an Office Robot. In *arXiv preprint arXiv:2209.11432*. September 9, 2022.

8. Reuth Mirsky, Xuesu Xiao, Justin Hart, Peter Stone. Conflict Avoidance in Social Navigation – A Survey. *arXiv preprint arXiv:2106:12113*. June 23, 2021.

Book Chapters

1. Justin Hart, Sara Sheikholeslami, Elizabeth Croft, Karon MacLean, Frank P. Ferrie, Clément Gosselin and Denis Laurandeau (2018) Developing Robot Assistants with Communicative Cues for Safe, Fluent HRI. In Hussein A. Abbass, Jason Scholz, and Darryn J. Reid (Eds.). *Foundations of Trusted Autonomy.* Berlin, Germany: Springer.

2. Justin Hart and Brian Scassellati. (2014) Robotic Self-Modeling. In Jeremy Pitt (Ed.). *The Computer After Me.* London, UK: Imperial College Press.

3. Justin Hart and Brian Scassellati. (2011) Robotic Models of Self. In Michael T. Cox, and Anita Raja (Eds.). *Metareasoning: Thinking about Thinking.* Cambridge, MA, USA: MIT Press.

Newsletter Articles

1. Justin Hart and Brian Scassellati. Self-Awareness and Social Competencies. (2010) *AMD NEWSLETTER: The Newsletter of the Autonomous Mental Development Technical Committee.* vol. 12(1), Spring 2015.

Doctoral Thesis

1. Justin Hart. (2014) Robot Self-Modeling. Ph.D. Thesis, Yale University, New Haven, CT, USA, December 2014.

Talks and Posters

Talks to Corporate Laboratories

1. Justin Hart. *Semantic SLAM for Augmented Reality and Robotics. (Final Readout)* Cisco Research. September 9, 2024.
2. Justin Hart and Yifan Xu. *Dobby: An Interactive Robot Incorporating Large Language Models* UT Austin Good Systems Symposium. March 27, 2024. `https://www.youtube.com/watch?v=hnrxhxFRfk8`
3. Carson Stark & Justin Hart. *Dobby at Hook 'Em House at Antones - UT at SXSW* SXSW. March 8, 2024.
4. Justin Hart. *Semantic SLAM for Augmented Reality and Robotics. (Contract 1-Year End Talk)* Cisco Research. October 16, 2023
5. Justin Hart. *Semantic SLAM for Augmented Reality and Robotics. (Update 2)* Cisco Research. June 12, 2023
6. Justin Hart. *Semantic SLAM for Augmented Reality and Robotics. (Update 1)* Cisco Research. December 1, 2022
7. Justin Hart. *Vision, Mapping, and Interaction for Home Robots & Human Interfaces.* Cisco Research. October 13, 2022

Talks at UT Austin

1. Justin Hart. *The Living with Robots Lab* Deans Scholars Honors Program at The University of Texas at Austin - Dean's Scholars Lunch Talk. October 11, 2024
2. Justin Hart. *The Living with Robots Lab* Texas Robotics Symposium. October 19, 2023
3. Justin Hart. *The Living with Robots Lab* Engineering and Computational Learning of Artificial Intelligence in Robotics (ECLAIR). October 5, 2023
4. Justin Hart. *Living and Working with Robots* Good Systems Fall Kickoff Meeting. September 9, 2023

Invited Talks[4]

1. Justin Hart. Domestic Robots in The Living with Robots Laboratory. *Austin Robotics Meetup.* Online. March 5, 2025.
2. Justin Hart. The Living with Robots Laboratory. *National Science Foundation Quori Community Workshop.* Madison, Wisconsin, USA. April 4, 2025.
3. Justin Hart. (Panelist) Design and Collection of HRI Datasets. *HRI Workshop on The Road to Reliable Robots: Interpretable, Accessible, and Reproducible HRI Research.* Melbourne, Victoria, Australia. March 3, 2025.
4. Justin Hart. Living and Working with Reliable Robots. *HRI Workshop on The Road to Reliable Robots: Interpretable, Accessible, and Reproducible HRI Research.* Melbourne, Victoria, Australia. March 3, 2025.

[4]Not including department talks or paper presentations

5. Justin Hart (Panelist). *HRI Workshop on End User Development for Human-Robot Interaction (EUD4HRI)*. Boulder, Colorado, USA. March 15, 2024.
6. Justin Hart (Panelist). *AAAI Fall Symposium on Distributed Teaching Collaboratives for AI and Robotics*. Arlington, Virginia, USA. November 17, 2022.
7. Justin Hart. *Getting Robots into Every Home and Workplace. CAIDA, University of British Columbia*. Online. June 21, 2022.
8. Justin Hart. Social Cues for Social Navigation *Google's HRI for Learning Robots Workshop*. Online. June 1-2, 2022.
9. Justin Hart. What's Going on at the UT Lab? *Austin Robotics Meetup*. Online. May 19, 2022.
10. Justin Hart. Robotics, Artificial Intelligence, and Human-Robot Interaction - Guest lecture on behalf of TIDES/FRI. *King Abdullah University of Science and Technology (KAUST)*. Online. June 27, 2021.
11. Justin Hart. What's Going on at the UT Austin Robotics Lab? *Austin Robotics Meetup*. Online. October 10, 2020.
12. Junfeng Jiao, Justin Hart, Joydeep Biswas, and Luis Sentis. (Moderated by Peter Stone). Robotics Panel: Last Mile Autonomous Delivery Systems. *The University of Texas at Austin - Bridging Barriers - Good Systems*. Online. September 11, 2020.
13. Justin Hart. Signaling to Peers Using Human-Inspired Communicative Cues. *Bithacks*. Online. August 8, 2020.
14. Justin Hart. Signaling to Peers Using Human-Inspired Communicative Cues. *Virtual Humanoid RoboCup Open Workshop*. Online. June 6, 2020.
15. Justin Hart. Semantic Mapping and Service Robots. *IEEE Metrocon*. Hurst, Texas, USA. November 7, 2018.
16. Justin Hart. Robot Self-Modeling and Self-Other Reasoning. *Mensa National Gathering*. Vancouver, British Columbia, Canada. August 1, 2015.
17. Justin Hart. Robot Self-Modeling and Self-Other Reasoning. *UBC Postdoc Talks*. Vancouver, British Columbia, Canada. July 8, 2015.
18. Justin Hart. Learning about people to build better robots. *Creative Mornings: Vancouver*. Vancouver, BC, Canada, May 1, 2015.
19. Justin Hart. Robotic Self-Modeling. *Ideacity*. Toronto, Ontario, Canada. June 2013.
20. Justin Hart. Robotic Self-Modeling. *Society of Manufacturing Engineers Annual Conference*. Baltimore, Maryland, USA. June 2013.
21. Justin Hart. Robot Self-Modeling. *UT Austin Forum for Artificial Intelligence*. Austin, TX, USA. April 19, 2013.

Conference and Workshop Talks (including invited talks)

1. Justin Hart. Ubiquitous HRI and Social Navigation. *AAAI Fall Symposium on Artificial Intelligence for Human-Robot Interaction (AI-HRI)*. (Invited Talk). Online. November 4, 2021.

2. Justin Hart. Robot Self-Modeling. *The Development of the Self: from self-perception to interaction under uncertainty. Workshop at ICDL-Epirob.* (Invited Talk). Lisbon Portugal, September 18, 2017.

3. Justin Hart and Brian Scassellati. Creating Social Agency. *NSF-JST workshop on Human-Robot Interaction.* (Invited Talk). Menlo Park, CA, USA, August 2010.

4. Justin Hart, Brian Scassellati, and Steven Zucker. Estimating the Kinematics of Unseen Joints that Affect the Stereo Vision System. *The 4th Annual New England Manipulation Symposium.* Providence, RI, USA, May 2008.

Posters

1. Justin Hart, Brian Scassellati, and Steven W. Zucker. Calibrating the Eye Motion of a Humanoid Robot. Appeared at *The IEEE International Conference on Development and Learning (ICDL)*. Monterey, California. August 9-12, 2008.

2. Justin Hart, Eleanor Avrunin, David Golub, Brian Scassellati, and Steven Zucker. Incorporating Active Vision into the Body Schema. Appeared at *The ACM/IEEE International Conference on Human-Robot Interaction (HRI 2008)*. La Jolla, California, March 12-15, 2008.

3. Justin Hart, Brian Scassellati, and Steven Zucker. Epipolar Geometry for Humanoid Robotic Heads. Appeared at *The Third North East Student Colloquium on Artificial Intelligence (NESCAI)*. Ithaca, NY, USA, May 2008.

Selected Media Coverage

1. *NSF GCR: Community-Embedded Robotics: Understanding Sociotechnical Interactions with Long-term Autonomous Deployments*

   (a) CBS News. *Texas program studies human-robot interactions.* February 9, 2023.
   `https://www.cbsnews.com/video/texas-program-studies-human-robot-interactions/`

   (b) CBS Austin. *Robots will soon be among students at the University of Texas.* October 18, 2022.
   `https://cbsaustin.com/news/local/robots-will-soon-be-among-students-at-the-university-of-texas`

   (c) Texas Monthly. *Its Okay to Fear the Robot Dogs Coming to UT.* October 27, 2022.
   `https://www.texasmonthly.com/news-politics/robot-dogs-coming-to-ut/`

   (d) USA Today/Austin American-Statesman. *Dog-like robots will make deliveries on a Texas campus to see how people, robots interact.* October 18, 2022.
   `https://www.usatoday.com/story/news/education/2022/10/18/university-texas-dog-robots-deliver/10532562002/`

   (e) KVUE (ABC Affiliate). *New dog-like robots to appear on UT campus.* October 17, 2022.
   `https://www.youtube.com/watch?v=3OITL5i9PnM`

   (f) UT News. *Can Robots and Humans Co-exist in Public? UT Campus Study Will Offer Answers.* October 17, 2022.
   `https://news.utexas.edu/2022/10/17/can-robots-and-humans-co-exist-in-public-ut-campus-study-will-offer-answers/`

2. *NSF NRT: Convergent, Responsible, and Ethical AI Training Experience in Robotics*

   (a) UT College of Natural Sciences. *New Partnership Will Scale Up Investment in Ethical AI Research and Innovation.* August 5, 2022.
   `https://cns.utexas.edu/news/new-partnership-will-scale-up-investment-in-ethical-ai-research-and-innovation`

3. The Short-to-Medium Range Autonomous Delivery System

   (a) Medium. *Robots in Real Time.* September 21, 2020.
   `https://medium.com/good-systems/robots-in-real-time-c914d1fe2fe2`

4. The Opening of the Anna Hiss Gymnasium and Establishment of the Army Futures Command Robotics Center of Excellence (AFC-RCOE)

   (a) UT News. *Mission Accomplished*. November 5, 2020.
   `https://news.utexas.edu/2020/11/05/mission-accomplished/`

5. My doctoral thesis - A robot performing motor skills in a mirror

   (a) NBC News. *What the Rise of Sentient Robots Will Mean for Human Beings*. June 19, 2017.
   `https://www.nbcnews.com/mach/tech/what-rise-sentient-robots-will-mean-human-beings-ncna773146`

   (b) New Scientist. *Robot learns to recognise itself in the mirror*. August 22, 2012.
   `http://www.newscientist.com/article/mg21528785.900-robot-learns-to-recognise-itself-in-the-mirror.html`

   (c) BBC News. *Robot learns to recognise itself in mirror*. August 23, 2012.
   `http://www.bbc.com/news/technology-19354994`

   (d) NBC News. '*Robot learns to track itself and the world through a mirror*. August 25, 2012.
   `http://www.nbcnews.com/technology/futureoftech/robot-learns-track-itself-world-through-mirror-961379`

   (e) Business Standard. *Now, a 'Self-aware' robot that recognises itself in the mirror*. August 23, 2012.
   `http://tinyurl.com/9txnky7`

   (f) Technabob. *Nico the Robot Recognizes Self in the Mirror*. August 24, 2012.
   `https://technabob.com/blog/2012/08/24/nico-the-robot-recognizes-self/`

   (g) CBS SmartPlanet. *Robot passes one milestone in tests of self-awareness*. August 31, 2012.
   `http://www.smartplanet.com/blog/science-scope/robot-passes-one-milestone-in-tests-of-self-awareness/13600`

   (h) El Mundo. '*Nico, el robot que est aprendiendo a mirarse al espejo*. August 29, 2012.
   `http://www.elmundo.es/elmundo/2012/08/29/navegante/1346229933.html`

   (i) Yale Graduate School of Arts & Sciences: Graduate School News and Events, "Using Robots to Study Self Awareness," April, 2012.
   `http://www.yale.edu/graduateschool/publications/news/201205/computer-science-robots-self-awareness.html`

6. *No Fair! An Interaction with a Cheating Robot*

   (a) GE Focus Forward Films. *Robot*. June, 2012.
   `http://focusforwardfilms.com/films/41/robot` (Also featured in Google Solve for X.)

Awards & Recognitions

- Society of Manufacturing Engineers Innovation Watch List - 2013

Graduate Mentoring

- PhD students:

  - David Balaban. Thesis Project: Semantic Mapping

- Co-Supervising:
  - Christina Petlowany, who is supervised by Mitch Pryor (Mechanical Engineering).
- Committee Member:
  - Huihai Wang, who is supervised by Junfeng Jiao (Architecture).
  - Brandon Nunley, who is supervised by Nicholas Fey (Mechanical Engineering).
- I have also worked closely with several of Peter Stone's and Luis Sentis's students, as reflected in my publication record.

Master's Reader

- Rolando Fernandez. Thesis: *Light-Based Nonverbal Signaling with Passive Demonstration for Mobile Service Robots.* With: Peter Stone. 2018.

Undergraduate Mentoring

Undergraduate Thesis Supervision

- Victoria Zhou. UT CS Honors Thesis. "Exploration of Neural Networks for Stereo Vision." 2019.
- Nick Walker. Polymathic Scholars Thesis: "An Interaction Perspective on Learning for Domestic Service Robots." Bridging Disciplines Program Creative Project: "Exploring New Techniques for Generative Art." 2018.

Other Undergraduate Supervision

The following 25 undergraduate students have performed research under my supervision that resulted in publications at UT Austin: Abrar Anwar, Akash Singh, Asha Jain, Blake Holman, Bonnie Mahajan, Connor Sheehan, Daksh Dua, Geethika Hemkumar, Gilbert Briscoe-Martinez, Harshavardhan Jagannathan, Henry Liu, Jacqueline Deans, Jamin Goo, Kathryn Baldauf, Mahathi Chillaria, Marika Murphy, Nathan John, Parth Chonkar, Rishi Shah, Nicholas Walker, Rolando Fernandez, Sean Kirmani, Shikhar Gupta, Stone Tejeda, Sydney Owen.

The following 11 students are currently working with me and have work that is either under review or preparation for submission to a fall conference or journal: Alekhya Kuchimanchi, David Tang, Efren Mendoza Enriquez, Hanaa Siddiqui, Henry Plante, Justin Medich, Mrityunjay (Manas) Mishra, Ruchi Bhalani, Saarthak Mohan, Sheryl Dsouza, Tiffany Kao.

The following 44 students have served as peer mentors (undergraduate TAs) for my Peter's FRI stream: Abrar Anwar, Akash Singh, Alekhya Kuchimanchi, Anna Wang, Anwesha Roy, Blake Holman, Bonnie Mahajan, Brigette Krause, Connor Sheehan, Daksh Dua, David Tang, Ethan Brown, Geethika Hemkumar, Hanaa Siddiqui, Henry Liu, Jacqueline Deans, Jamin Goo, Jeffrey Huang, Jennifer Suriadinata, Jonathan Browne, Joseph Moyalan, Kathryn Baldauf, Lucinda Nguyen, Madeleine Williams, Mahathi Chillaria, Marika Murphy, Matthew Kozlowski, Mayuri Raja, Mrityunjay (Manas) Mishra, Nalin Mahajan, Nathan John, Nicholas Walker, Parth Chonkar, Pranav Rayudu, Rishi Shah, Ruchi Bhalani, Shikhar Gupta, Stone Tejeda, Sydney Owen, Vanna Chen, Victoria Zhou, Vijay Vuyyuru, Vineeth Bandi, Xiangwei (David) Chen.

I am also fortunate to have informally mentored 16 students during my time at both UBC and Yale. UBC Masters: Sara Shiekholeslami, Vidar Skjervy (on exchange from University of Glasgow). UBC undergraduates: Vedanshu Dash, Louisa Hardjasa, Henry Mak, Alexander Toews. Yale Undergraduates: Ashley Douglas, David Golub, Elaine Short, Eleanor Avrunin, Gabriel Fernandez, Graham Radman, Justin Kosslyn, Kenny Casteneda, Michelle Vu, Wilma Bainbridge.

Funding

UT Austin Portugal Program *FOundation MOdels for HumanOid DOmestic RObots*
Modelos Fundacionais para Robs Domsticos Humanides
2024 Call for Exploratory Research Projects under the UT Austin Portugal Program
Role: Co-PI
Period: September 2025 - September 2026.

NSF Award *GCR: Community-Embeded Robotics: Understanding Sociotechnical Interactions with Long-term Autonomous Deployments*
Role: Co-PI
Period: October 2022 - September 2027.

UT Austin Bridging-Barriers: Good Systems *Living and Working with Robots*
Role: Co-PI
Period: September 2021 - September 2026.

NSF Award *NRT-AI: Convergent, Responsible, and Ethical Artificial Intelligence Training Experience for Roboticists*
Role: Co-PI
Period: September 2021 - August 2026.

Army Futures Command Robotics Center of Excellence *Persistent Fully Autonomous Multi-Robot Tactics in Complex Environments*
Role: Co-PI
Period: October 2019 - December 2022.

Cisco Systems *Semantic SLAM for Augmented Reality and Robotics*
Role: PI
Period: September 2022 - December 2024.