Ross A. Knepper

Curriculum Vitae

Personal

205 Bryant Ave
Ithaca, NY 14850
607-255-8634 (work)
412-897-9896 (cell)
rak@cs.cornell.edu
`http://www.cs.cornell.edu/~rak`
US citizen; born January 8, 1977 in Boston, Massachusetts, USA

Experience

2014–present	**Assistant Professor**, Computer Science Dept., Cornell University.
2013–2014	**Research Scientist**, Distributed Robotics Lab, MIT.
2011–2013	**Postdoctoral Associate**, Distributed Robotics Lab, MIT.
2004–2006	**Software Engineer**, National Robotics Engineering Center, CMU.
2000–2003	**Systems Software Engineer**, Compaq Computer Corporation.

Education

Ph.D., Robotics, August 2011
Robotics Institute, Carnegie Mellon University, Pittsburgh, PA
Thesis title: *On the Fundamental Relationships Among Path Planning Alternatives*.
Advisor Matthew Mason

M.S., Robotics, December 2007
Robotics Institute, Carnegie Mellon University, Pittsburgh, PA
Advisor Matthew Mason

B.S., Computer Science and Social History, December 1999
Computer Science Dept., Carnegie Mellon University, Pittsburgh, PA
Minor in Robotics

Publications

Thesis

[1] Ross A. Knepper. "On the Fundamental Relationships Among Path Planning Alternatives". PhD thesis. Technical Report CMU-RI-TR-11-19: Robotics Institute, Carnegie Mellon University, Aug. 2011.

Peer-Reviewed Journal Papers

[2] Huichan Zhao, Jonathan Jalving, Rukang Huang, Ross A. Knepper, Andy Ruina, and Robert Shepherd. "A Helping Hand: Soft Orthosis with Integrated Optical Strain Sensors and EMG Control". In: *IEEE Robotics and Automation Magazine* 23.3 (Sept. 2016), pp. 55–64.

[3] Mehmet Dogar, Ross A. Knepper, Andrew Spielberg, Changhyun Choi, Henrik I. Christensen, and Daniela Rus. "Multi-Scale Assembly with Robot Teams". In: *International Journal of Robotics Research* 34.13 (Nov. 2015). **Invited Submission**.

[4] Ross A. Knepper, Stefanie Tellex, Adrian Li, Nicholas Roy, and Daniela Rus. "Recovering from Failure by Asking for Help". In: *Autonomous Robots* 39.3 (Oct. 2015). **Invited Submission**, pp. 347–362.

[5] Thomas Howard, Mihail Pivtoraiko, Ross A. Knepper, and Alonzo Kelly. "Model-Predictive Motion Planning for Autonomous Mobile Robots". In: *IEEE Robotics and Automation Magazine* 21.1 (Mar. 2014), pp. 64–73.

[6] Ross A. Knepper and Matthew T. Mason. "Realtime Informed Path Sampling for Motion Planning Search". In: *International Journal of Robotics Research* 31.11 (Sept. 2012). **Invited Submission**, pp. 1231–1250.

[7] Ross A. Knepper, Siddhartha S. Srinivasa, and Matthew T. Mason. "Toward a deeper understanding of motion alternatives via an equivalence relation on local paths". In: *International Journal of Robotics Research* 31.2 (Feb. 2012). **Invited Submission**, pp. 168–187.

[8] Siddhartha S. Srinivasa, Dmitry Berenson, Maya Cakmak, Alvaro Collet, Mehmet R. Dogar, Anca D. Dragan, Ross A. Knepper, Tim Niemueller, Kyle Strabala, Mike Vande Weghe, and Julius Ziegler. "HERB 2.0: Lessons Learned From Developing a Mobile Manipulator for the Home". In: *Proceedings of the IEEE* 100.8 (Aug. 2012). **Invited Submission**, pp. 2410–2428.

[9] Mihail Pivtoraiko, Ross A. Knepper, and Alonzo Kelly. "Differentially Constrained Mobile Robot Motion Planning in State Lattices". In: *Journal of Field Robotics* 26.3 (2009), pp. 308–333.

Peer-Reviewed Conference Papers

[10] Ross A. Knepper, Christoforos I. Mavrogiannis, Julia Proft, and Claire Liang. "Implicit Communication in a Joint Action". In: *Proceedings of the ACM/IEEE International Conference on Human-Robot Interaction*. Vienna, Austria, Mar. 2017.

[11] Minae Kwon, Malte F. Jung, and Ross A. Knepper. "Human Expectations of Social Robots". In: *Late Breaking Report at the ACM/IEEE International Conference on Human-Robot Interaction*. Christchurch, New Zealand, Mar. 2016.

[12] Christoforos I. Mavrogiannis and Ross A. Knepper. "Decentralized Multi-Agent Navigation Planning with Braids". In: *Proceedings of the Workshop on the Algorithmic Foundations of Robotics*. San Francisco, USA, Dec. 2016.

[13] Wil Thomason and Ross A. Knepper. "Recognizing Unfamiliar Gestures for Human-Robot Interaction through Zero-Shot Learning". In: *Proceedings of the International Symposium of Experimental Robotics*. Tokyo, Japan, Oct. 2016.

[14] Javier Alonso-Mora, Ross A. Knepper, Roland Siegwart, and Daniela Rus. "Local Motion Planning for Collaborative Multi-Robot Manipulation of Deformable Objects". In: *Proceedings of the IEEE International Conference on Robotics and Automation*. Seattle, USA, May 2015.

[15] Abhishek Anand and Ross Knepper. "ROSCoq: Robots powered by constructive reals". In: *The 6th Conference on Interactive Theorem Proving*. Nanjing, China, Aug. 2015.

[16] Ian Lenz, Ross A. Knepper, and Ashutosh Saxena. "DeepMPC: Learning Deep Latent Features for Model Predictive Control". In: *Proceedings of the Robotics Science and Systems Conference*. Rome, Italy, July 2015.

[17] Mehmet Dogar, Ross A. Knepper, Andrew Spielberg, Changhyun Choi, Henrik I. Christensen, and Daniela Rus. "Towards Coordinated Precision Assembly with Robot Teams". In: *Proceedings of the International Symposium of Experimental Robotics*. Marrakesh and Essaouira, Morocco, June 2014.

[18] Laura Lindzey, Ross A. Knepper, Howie Choset, and Siddhartha S. Srinivasa. "The Feasible Transition Graph: Encoding Topology and Manipulation Constraints for Multirobot Push-Planning". In: *Proceedings of the Workshop on the Algorithmic Foundations of Robotics*. Istanbul, Turkey, Aug. 2014.

[19] Stefanie Tellex, Ross A. Knepper, Adrian Li, Nicholas Roy, and Daniela Rus. "Asking for Help Using Inverse Semantics". In: *Proceedings of the Robotics Science and Systems Conference*. **Best Paper**. Berkeley, USA, July 2014.

[20] Dan Feldman, Stephanie Gil, Ross A. Knepper, Brian Julian, and Daniela Rus. "K-Robots Clustering of Moving Sensors Using Coresets". In: *Proceedings of the IEEE International Conference on Robotics and Automation*. Karlsruhe, Germany, May 2013.

[21] Ross L. Hatton, Ross A. Knepper, Howie Choset, David Rollinson, Chaohui Gong, and Enric Galceran. "Snakes on a Plan: Toward Combining Planning and Control". In: *Proceedings of the IEEE International Conference on Robotics and Automation*. Karlsruhe, Germany, May 2013.

[22] Ross A. Knepper, Todd Layton, John Romanishin, and Daniela Rus. "IkeaBot: An Autonomous Multi-Robot Coordinated Furniture Assembly System". In: *Proceedings of the IEEE International Conference on Robotics and Automation*. **Best Automation Paper Finalist**. Karlsruhe, Germany, May 2013.

[23] Ross A. Knepper and Daniela Rus. "On the Completeness of Ensembles of Motion Planners for Decentralized Planning". In: *Proceedings of the IEEE International Conference on Robotics and Automation*. Karlsruhe, Germany, May 2013.

[24] Ross A. Knepper, Stefanie Tellex, Adrian Li, Nicholas Roy, and Daniela Rus. "Single Assembly Robot in Search of Human Partner: Versatile Grounded Language Generation". In: *Late Breaking Report at the ACM/IEEE International Conference on Human-Robot Interaction*. Tokyo, Japan, Mar. 2013.

[25] Jue Wang, Fadel Adib, Ross A. Knepper, Dina Katabi, and Daniela Rus. "RF-Compass: Robot Object Manipulation using RFIDs". In: *MobiCom: International Conference on Mobile Computing and Networking*. Miami, USA, Oct. 2013.

[26] Ross A. Knepper and Daniela Rus. "Pedestrian-Inspired Sampling-Based Multi-Robot Collision Avoidance". In: *Proceedings of the IEEE International Symposium on Robot and Human Interactive Communication*. Paris, France, Sept. 2012.

[27] Ross A. Knepper and Matthew T. Mason. "Improved Hierarchical Planner Performance Using Local Path Equivalence". In: *Proceedings of the IEEE International Conference on Intelligent Robots and Systems*. San Francisco, USA, Sept. 2011.

[28] Ross A. Knepper and Matthew T. Mason. "Realtime Informed Path Sampling for Motion Planning Search". In: *Proceedings of the International Symposium on Robotics Research*. Flagstaff, USA, Aug. 2011.

[29] Ross A. Knepper, Siddhartha S. Srinivasa, and Matthew T. Mason. "An Equivalence Relation for Local Path Sets". In: *Proceedings of the Workshop on the Algorithmic Foundations of Robotics*. Singapore, Dec. 2010.

[30] Ross A. Knepper, Siddhartha S. Srinivasa, and Matthew T. Mason. "Hierarchical Planning Architectures for Mobile Manipulation Tasks in Indoor Environments". In: *Proceedings of the IEEE International Conference on Robotics and Automation*. Anchorage, USA, May 2010.

[31] Ross A. Knepper and Matthew T. Mason. "Path Diversity is Only Part of the Problem". In: *Proceedings of the IEEE International Conference on Robotics and Automation*. Kobe, Japan, May 2009.

[32] Michael S. Branicky, Ross A. Knepper, and James J. Kuffner. "Path and Trajectory Diversity: Theory and Algorithms". In: *Proceedings of the IEEE International Conference on Robotics and Automation*. Pasadena, USA, May 2008.

[33] Ross A. Knepper and Matthew T. Mason. "Empirical Sampling of Path Sets for Local Area Motion Planning". In: *Proceedings of the International Symposium of Experimental Robotics*. Athens, Greece, July 2008.

[34] Thomas M. Howard, Ross A. Knepper, and Alonzo Kelly. "Constrained Optimization Path Following of Wheeled Robots in Natural Terrain". In: *Proceedings of the International Symposium of Experimental Robotics*. Rio de Janeiro, Brazil, July 2006.

[35] Ross A. Knepper and Alonzo Kelly. "High Performance State Lattice Planning Using Heuristic Look-Up Tables". In: *Proceedings of the IEEE International Conference on Intelligent Robots and Systems*. Beijing, China, Oct. 2006.

[36] Howie Choset, Ross Knepper, Joleen Flasher, Sean Walker, Andrew Alford, Dean Jackson, David Kortenkamp, Jaime J. Fernandez, and Robert R. Burridge. "Path Planning and Control for AERCam, a Free-Flying Inspection Robot in Space". In: *Proceedings of the IEEE International Conference on Robotics and Automation*. Detroit, USA, May 1999.

Workshop Papers

[37] Ross A. Knepper. "On the Communicative Aspect of Human-Robot Joint Action". In: *Workshop: Toward a Framework for Joint Action, What about Common Ground?* Proceedings of the IEEE International Symposium on Robot and Human Interactive Communication. New York, USA, Aug. 2016.

[38] Minae Kwon, Malte F. Jung, and Ross A. Knepper. "Human Expectations of Social Robots". In: *Workshop on Challenges and best practices to study HRI in natural interaction settings*. Proceedings of the ACM/IEEE International Conference on Human-Robot Interaction. Christchurch, New Zealand, Mar. 2016.

[39] Christoforos I. Mavrogiannis and Ross A. Knepper. "Interpretation and Communication of Pedestrian Intentions Using Braid Groups". In: *Workshop on Intention Recognition in HRI*. Proceedings of the ACM/IEEE International Conference on Human-Robot Interaction. Christchurch, New Zealand, Mar. 2016.

[40] Christoforos I. Mavrogiannis and Ross A. Knepper. "Towards Socially Competent Navigation of Pedestrian Environments". In: *Workshop on Social Trust in Autonomous Robots*. Proceedings of the Robotics Science and Systems Conference. Ann Arbor, USA, June 2016.

[41] Wil Thomason and Ross A. Knepper. "Recognizing Unfamiliar Gestures for Human-Robot Interaction through Zero-Shot Learning". In: *Workshop on Model Learning for Human-Robot Communication*. Proceedings of the Robotics Science and Systems Conference. Ann Arbor, USA, June 2016.

[42] Ross A. Knepper, Dishaan Ahuja, Geoffrey Lalonde, and Daniela Rus. "Distributed Assembly with AND/OR Graphs". In: *Workshop on AI Robotics*. Proceedings of the IEEE International Conference on Intelligent Robots and Systems. Chicago, USA, Sept. 2014.

[43] Ross A. Knepper, Stefanie Tellex, Adrian Li, Thomas M. Howard, Daniela Rus, and Nicholas Roy. "Asking for Help: Assembling Furniture by Asking for Help from a Human Partner". In: *Collaborative Manipulation: New Challenges for Robotics and HRI*. Proceedings of the ACM/IEEE International Conference on Human-Robot Interaction. Tokyo, Japan, Mar. 2013.

[44] Ross A. Knepper and Daniela Rus. "Human-Inspired Distributed Collision Avoidance". In: *Workshop on Many-Robot Systems: Crossing the Reality Gap*. Proceedings of the IEEE International Conference on Robotics and Automation. St. Paul, USA, May 2012.

Technical Reports

[45] Laura Lindzey, Howie Choset, Siddhartha Srinivasa, and Ross A. Knepper. *Multirobot Pushing—How Many Robots are Sufficient?* Tech. rep. CMU-RI-TR-12-15. Robotics Institute, Carnegie Mellon University, May 2012.

[46] Ross A. Knepper, Siddhartha S. Srinivasa, and Matthew T. Mason. *Curvature bounds on the weighted Voronoi diagram of two proximal paths with shape constraints*. Tech. rep. CMU-RI-TR-10-25. Robotics Institute, Carnegie Mellon University, Nov. 2010.

[47] Mihail Pivtoraiko, Ross A Knepper, and Alonzo Kelly. *Optimal, Smooth, Nonholonomic Mobile Robot Motion Planning in State Lattices*. Tech. rep. CMU-RI-TR-07-15. Robotics Institute, Carnegie Mellon University, May 2007.

Invited Talks

"Implicit Communication in a Joint Action", Department of Computer Science Seminar Series, University of Rochester, Rochester, NY, USA, October 24, 2016.

"Understanding People: Implicit Communication in Collaborative Autonomy", IEEE International Conference on Intelligent Robots and Systems, Workshop on Perspectives on Analysis and Design of Human-Centered Robotics, Daejeon, Korea, October 10, 2016.

"Theory of Implicit Communication", IEEE International Conference on Intelligent Robots and Systems, Workshop on Human-Robot Collaboration: Towards Co-Adaptive Learning Through Semi-Autonomy and Shared Control, Daejeon, Korea, October 10, 2016.

"How can robots get along with people?" Kavli Frontiers of Science Indonesian-American Symposium, Malang, Indonesia, August 4, 2016.

"BlimpIt: Persistent Autonomy for the Developing World," Lightning talk and poster, 4th International Conference on Computational Sustainability, Ithaca, NY, USA, July 6, 2016.

"Duality of Robot Actions in a Collaborative Context"

- Workshop on Human-Robot Interaciton, INRIA, Paris, France, July 21, 2016.
- Workshop on Planning for Human-Robot Interaction: Shared Autonomy and Collaborative Robotics, Robotics: Science and Systems conference, Ann Arbor, MI, USA, June 18, 2016.

"Inverting Human Behavior Models in Context," World Robot Conference, Beijing, China, November 23, 2015.

"The Modern Prometheus," *AI for Human-Robot Interaction*, AAAI Fall Symposium, Alexandria, VA, USA, November 12, 2015.

"Asking for Help Using Inverse Semantics," Robotics Presentations, AAAI, Austin, TX, USA, January 29, 2015.

"Autonomous Assembly In a Human World"

- Computer Science Colloquium, Cornell University, Ithaca, USA. April 17, 2014.
- Computer Science Colloquium, University of Texas, Austin, USA. April 10, 2014.
- Mechanical Engineering and Materials Science Seminar, Yale University, New Haven, USA. March 26, 2014.
- Computer Science and Engineering Seminar, University of Minnesota Twin Cities, Minneapolis, USA. March 14, 2014.
- Computer Science Seminar, University of Massachusetts Amherst, Amherst, MA, USA. March 11, 2014.
- Computer Science Colloquium, University of Colorado, Boulder, USA. March 6, 2014.
- Woodruff School of Mechanical Engineering Seminar, Georgia Institute of Technology, Atlanta, USA. February 27, 2014.
- Department of Computer Science Colloquium, Rutgers University, New Brunswick, NJ, USA. February 25, 2014.
- Robotics Colloquium, University of Washington, Seattle, USA. November 7, 2013.

"Making Robots Move Like People"

- School of Computer Science, Carnegie Mellon University, Pittsburgh, USA. April 16, 2012.
- Robotics Engineering Colloquium, Worcester Polytechnic Institute, Worcester, MA, USA. March 1, 2012.

"On the Fundamental Relationships Among Path Planning Alternatives"

- Robotics and Intelligent Machines Seminar Series, Georgia Institute of Technology, Atlanta, USA. January 18, 2012.
- Rice University, Houston, USA. May 17, 2011.
- Computer Science and Artificial Intelligence Laboratory, Massachusetts Institute of Technology, Cambridge, MA, USA. April 27, 2011.

Teaching Experience

Cornell	CS 4750	Foundations of Robotics, Fall 2016.
	CS 4752	Robotic Manipulation, Spring 2015, Fall 2015.
	INFO 4410	Human Robot Interaction, Spring 2015.
	CS 6751	Introduction to Robotic Mobile Manipulation, Fall 2014, Spring 2016.
	CS 7790	Artificial Intelligence Seminar, Fall 2015, Spring 2016.
	CS 7796	Robotics Seminar, Spring 2016.
MIT	6.142	Robotics: Science and Systems 2, Fall 2012.

Doctoral Student Supervision

Cornell

William Thomason. Computer Science Field, 2015–present.

Christoforos Mavrogiannis. Mechanical Engineering Field, 2014–present.

Jonathan Jalving. Mechanical Engineering Field, 2014–present.

Ian Lenz. Computer Science Field, 2014–2016, Thesis title: Deep Learning for Robotic Perception and Control.

Thesis Committees

Cornell

- Abhishek Anand, Computer Science Field, Thesis title: "Trust in Proof Assistants : Opportunities and Limitations", Ph.D., Chair: Bob Constable, 2016.
- Yu-Han Lyu, *Dartmouth College*, Department of Computer Science, Thesis title: "Implications of Motion Planning: Optimality and K-Survivability", Ph.D., Chair: Devin Balkcom, 2016.
- Ian Lenz, Computer Science Field, Thesis title: "Deep Learning for Robotic Perception and Control", Ph.D., Chair: Ashutosh Saxena, 2015.
- Jonathan DeCastro, Mechanical Engineering Field, Ph.D., Chair: Hadas Kress-Gazit, 2016.
- Benjamin Reinhardt, Mechanical Engineering Field, Thesis title: "Induction Couplers: Contactless On-Orbit Actuation for Space Robotics", Ph.D., Chair: Mason Peck, 2015.
- Elijah Lee, Mechanical Engineering Field, M.S., Chair: Brian Kirby, 2015.

Masters Project Supervision

Cornell

- Chang Jiao, Elly Nakahara, and Sayge Schell, M.Eng., 2016.
- Heting Liu, "Moon Pointer", 2016–2017.
- Gabriel Abrahms, Yuanyuan "Amy" Chen, and Lingjun "Linda" Pei, M.Eng., 2016. **Received CS M.Eng. Project Award.**
- Ashish Bhatnegar and Samuel Giampa, M.Eng., 2016.
- Zhuo "Andy" Li, "Robotic Torsion Gripper for Furniture Assembly", M.Eng., 2016.
- Yuhao "Collin" Qian, "Robot Navigation Stack for Social Navigation", M.Eng., 2016.
- Derek Faust, "Environment-Assisted Manipulation", M.Eng., 2015.
- Daniel Nam, "Pedestrian Environment Simulator and Predicting Algorithm", M.Eng., 2015.

Undergraduate Project Supervision

Cornell

- Claire Liang. Implicature as a collaborative strategy in the game Hanabi, 2016.
- Chelsea Sidrane, Undergraduate Thesis, 2016.
- Rebecca Bernstein, Trevor MacDonald, Alexander Volkov, Alexander Ueki, Stephen Stover, Hon Wei Khor, Willie Xu, Ashley Xue, Matthew Luebbers, Alex Lui, Abrahm Magana, Shuqing (Coco) Wu, Sattvik Kansal, Alice Pham, Kyra Patton, Ian Kranz, Autonomous Solar-Powered Airship, 2016–present.
- Vitchyr Pong, Samantha Chen, Katey Huddleston, Melody Li, Alyssa Trigg, Parsing Ikea Instructions, 2015–2016.
- Yogisha Dixit, Daryl Sew, Samantha Chen, Liele Getachew, Shiv Malhotra, Zachary Vinegar, Detecting and Tracking Human Pedestrians, 2015–present.

- Alexander Volkov and Ian Kranz, Miniature Autonomous Car, 2015–2016.
- Minae Kwon, Lydia Holley, Andrew Matsumoto, Elizabeth Yam, Managing Human Expectations of Robots, 2014–present.
- Maheer Iqbal, Haptic Robot Control Interface, 2014–2015.

MIT

- Dishaan Ahuja, Geoff Lalonde, Multi-Robot Distributed Assembly Planning, 2012–2014.
- José Pacheco, KUKA youBot Inverse Kinematics, 2012–2013.
- John Romanishin, Undergraduate Thesis Title: "Development of a Robotic Torque Application Gripper for Automated Furniture Assembly", 2012.

Professional Service

Committees

- **Publicity chair** Robotics: Science and Systems (RSS) 2017
- **Co-chair** IEEE RAS Technical Committee on Robot Learning

Organizer

- Northeast Robotics Colloquium (NERC) October 29–30, 2016, Cornell University, Ithaca, NY, USA.
- RSS 2015 Workshop on negative results in experimental robotics: learning the right lessons from robots.

Editorial Duties

- **Associate Editor**, International Conference on Intelligent Robots and Systems (IROS) 2014–2016.
- **Associate Editor**, International Conference on Robotics and Automation (ICRA) 2012–2013, 2016–2017.
- **Associate Editor**, IEEE International Symposium on Robot and Human Interactive Communication (RO-MAN), 2016.
- **Program Committee Member**, Robotics Science and Systems (RSS) Conference 2012–2016.
- **Program Committee Member**, Conference on Artificial Intelligence (AAAI) 2014–2015.
- **Program Committee Member**, Robotics Track, Conference on Artificial Intelligence (AAAI) 2012–2013.

Reviewing Activities

- International Journal of Robotics Research (IJRR)
- IEEE Transactions on Robotics
- Journal of Artificial Intelligence Research (JAIR)
- Robotics and Autonomous Systems Journal
- Autonomous Robots Journal
- International Joint Conference on Artificial Intelligence (IJCAI)
- ACM/IEEE International Conference on Human-Robot Interaction (HRI)
- Workshop on the Algorithmic Foundations of Robotics (WAFR)
- IEEE International Conference on Robotics and Automation (ICRA)

- International Conference on Field and Service Robotics (FSR)
- Robotics: Science and Systems Conference (RSS)
- Neural Information Processing Systems Conference (NIPS)

Departmental Service

2016-2017	Graduate Admissions Committee, Department of Computer Science, Cornell University.
2015–present	Organizer, Robotics Seminar, Department of Computer Science, Cornell University.
2015–present	Organizer, Artificial Intelligence Seminar, Department of Computer Science, Cornell University.
2014–2015	Faculty Search Committee. Department of Computer Science, Cornell University.
2009–2011	Ph.D. Admissions Committee. Robotics Institute, Carnegie Mellon University.

Grants

2017–2019	Air Force Office of Sponsored Research, "Enabling Robust Persistent Autonomy in Robots"
2016–2019	National Science Foundation CCF-1646417, "CPS: Synergy: Coordinated Action Among Independent Mobile Cyber-Physical Systems"
2016–2017	Cornell University Seed Grant, "Towards a New Robotic Manipulation Formalism for the Real World"
2016–2019	National Science Foundation IIS-1563705, "CHS: Medium: Improving Distributed Teamwork Through Mobile Robotic Telepresence Systems"
2016–2019	Office of Naval Research N00014-16-1-2080, "Dexterous Manipulation Specification Via Language and Context Constraints"
2015–2016	HIT Robot Group
2015–2018	National Science Foundation IIS-1526035, "CHS: Small: Collaborative Research: Modeling Social Context to Improve Human-Robot Interaction"

Awards and Honors

2015	Finalist, Rethink Robotics Video Challenge, for "CS 4752 Robotic Manipulation."
2014	Best Paper, Robotics: Science and Systems (RSS) conference, for "Asking for Help Using Inverse Semantics."
2014	KUKA Innovation in Mobile Manipulation Award (Finalist)
2013	Best Automation Paper (Finalist), IEEE International Conference on Robotics and Automation (ICRA) 2013, for "IkeaBot: An Autonomous Multi-Robot Coordinated Furniture Assembly System."
2010	ICRA Travel Grant, Army Research Office
2009	Intel Summer Fellowship, Intel Labs Pittsburgh
2009	GRASSROOTS Fellowship, National Science Foundation
2009	Graduate Conference Funding, Carnegie Mellon University Graduate Student Assembly

Professional Memberships

Institute of Electrical and Electronics Engineers

Robotics and Automation Society
ACM SIGMOBILE

March 3, 2017