

# Curriculum Vitæ for Dr. Neil T. Dantam

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## I. Personal Data

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**Name** Neil Thomas Dantam

**Affiliation** Assistant Professor  
Department of Computer Science  
Colorado School of Mines  
Golden, CO 80401, USA

**Citizenship** USA  
(Born: Anderson, Indiana)

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## II. Professional Preparation

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- Postdoctoral Appointment, Computer Science, Rice University, 2014-2017
  - Advisors** Prof. Swarat Chaudhuri and Prof. Lydia Kavraki
  - Topic** *Integrated Task and Motion Planning for Robots*
- Ph.D. in Robotics, December 2014
  - University** Georgia Institute of Technology
  - Advisor** Prof. Mike Stilman
  - Committee Chair** Prof. Henrik Christensen
  - Thesis Title** *A Linguistic Method for Robot Verification, Programming, and Control*
- B.S. in Computer Science,  
B.S. in Mechanical Engineering (BSME),  
Minor in Economics,  
Purdue University, May 2008
- Indiana Academy for Science, Mathematics, and Humanities, May 2004

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## III. Publications

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### Book Chapters

- [1] N. T. Dantam, *Task and Motion Planning*. Springer Berlin Heidelberg, 2020.

## Refereed Journal Papers

- [2] M. A. Schack, J. G. Rogers, Q. Han, and N. T. Dantam, “[Optimizing Non-Markovian Information Gain under Physics-based Communication Constraints](#),” *IEEE Robotics and Automation Letters*, 2021.
- [3] N. T. Dantam, “[Robust and efficient forward, differential, and inverse kinematics using dual quaternions](#),” *International Journal of Robotics Research*, 2020.
- [4] A. Wells, N. T. Dantam, A. Shrivastava, and L. E. Kavraki, “[Learning Feasibility for Task and Motion Planning in Tabletop Environments](#),” *IEEE Robotics and Automation Letters*, vol. 4, no. 2, pp. 1255–1262, 2019.
- [5] F. Lagriffoul, N. T. Dantam, C. Garrett, A. Akbari, S. Srivastava, and L. E. Kavraki, “[Platform-Independent Benchmarks for Task and Motion Planning](#),” *IEEE Robotics and Automation Letters*, vol. 3, no. 4, pp. 3765–3772, 2018.
- [6] N. T. Dantam, Z. K. Kingston, S. Chaudhuri, and L. E. Kavraki, “[An Incremental Constraint-Based Framework for Task and Motion Planning](#),” *International Journal of Robotics Research, Special Issue on the 2016 Robotics: Science and Systems Conference*, vol. 37, no. 10, pp. 1134–1151, 2018.
- [7] N. T. Dantam, S. Chaudhuri, and L. E. Kavraki, “[The Task Motion Kit](#),” *Robotics and Automation Magazine*, vol. 25, no. 3, pp. 61–70, 2018.
- [8] N. T. Dantam, K. Bøndergaard, M. A. Johansson, T. Furuholm, and L. E. Kavraki, “[Unix Philosophy and the Real World: Control Software for Humanoid Robots](#),” *Frontiers in Robotics and Artificial Intelligence, Research Topic on Software Architectures for Humanoid Robotics*, vol. 3, 2016.
- [9] N. T. Dantam, D. M. Lofaro, A. Hereid, P. Oh, A. Ames, and M. Stilman, “[The Ach IPC Library](#),” *Robotics and Automation Magazine*, vol. 22, no. 1, pp. 76–85, 2015.
- [10] N. T. Dantam and M. Stilman, “[The Motion Grammar: Analysis of a Linguistic Method for Robot Control](#),” *Transactions on Robotics*, vol. 29, no. 3, pp. 704–718, 2013.

## Refereed Conference Papers

- [11] R. B. Jackson, S. Li, S. B. Banisetty, S. Siva, H. Zhang, N. T. Dantam, and T. Williams, “An integrated approach to context-sensitive moral cognition in robot cognitive architectures,” in *International Conference on Intelligent Robots and Systems*. IEEE/RSJ, 2021.
- [12] M. A. Schack, J. G. Rogers, Q. Han, and N. T. Dantam, “Optimization-based robot team exploration considering attrition and communication constraints,” in *International Conference on Intelligent Robots and Systems*. IEEE/RSJ, 2021.
- [13] S. Li and N. T. Dantam, “[Learning Proofs of Motion Planning Infeasibility](#),” in *Robotics: Science and Systems*, 2021.
- [14] —, “[Towards General Infeasibility Proofs in Motion Planning](#),” in *International Conference on Intelligent Robots and Systems*. IEEE/RSJ, 2020.

- [15] N. T. Dantam, “[Practical Exponential Coordinates using Implicit Dual Quaternions](#),” in *Workshop on the Algorithmic Foundations of Robotics*, 2018, pp. 639–655.
- [16] T. Williams, N. Tran, J. Rands, and N. T. Dantam, “[Augmented, Mixed, and Virtual Reality Enabling of Robot Deixis](#),” in *Virtual, Augmented and Mixed Reality: Interaction, Navigation, Visualization, Embodiment, and Simulation*, J. Y. Chen and G. Fragomeni, Eds., 2018, pp. 257–275.
- [17] N. T. Dantam, Z. K. Kingston, S. Chaudhuri, and L. E. Kavraki, “[Incremental Task and Motion Planning: A Constraint-Based Approach](#),” in *Robotics: Science and Systems*, 2016.
- [18] Y. Wang, N. T. Dantam, S. Chaudhuri, and L. E. Kavraki, “Task and motion policy synthesis as liveness games,” in *International Conference on Automated Planning and Scheduling*. AAAI, 2016.
- [19] Z. K. Kingston, N. T. Dantam, and L. E. Kavraki, “[Kinematically Constrained Workspace Control via Linear Optimization](#),” in *International Conference on Humanoid Robots*. IEEE, 2015, pp. 758–764.
- [20] N. T. Dantam, H. B. Amor, H. Christensen, and M. Stilman, “[Online Multi-Camera Registration for Bimanual Workspace Trajectories](#),” in *International Conference on Humanoid Robots*. IEEE, 2014, pp. 588–593, **Best Paper Finalist, Mike Stilman Award Finalist**.
- [21] N. T. Dantam and M. Stilman, “[Spherical Parabolic Blends for Robot Workspace Trajectories](#),” in *International Conference on Intelligent Robots and Systems*. IEEE, 2014, pp. 3624–3629.
- [22] N. T. Dantam, H. B. Amor, H. Christensen, and M. Stilman, “[Online Camera Registration for Robot Manipulation](#),” in *International Symposium on Experimental Robotics*. Springer, 2014, pp. 179–194.
- [23] N. T. Dantam, A. Hereid, A. Ames, and M. Stilman, “[Correct Software Synthesis for Stable Speed-Controlled Robotic Walking](#),” in *Robotics: Science and Systems*, 2013.
- [24] M. Grey, N. T. Dantam, D. M. Lofaro, P. Oh, A. Bobick, M. Egerstedt, and M. Stilman, “[Multi-Process Control Software for Humanoid Robots](#),” in *IEEE International Conference on Technologies for Practical Robot Applications*, 2013, pp. 190–195.
- [25] N. T. Dantam and M. Stilman, “[Robust and Efficient Communication for Real-Time Multi-Process Robot Software](#),” in *International Conference on Humanoid Robots*. IEEE, 2012, pp. 316–322.
- [26] N. T. Dantam, I. Essa, and M. Stilman, “[Linguistic Transfer of Human Assembly Tasks to Robots](#),” in *Intelligent Robots and Systems*. IEEE, 2012.
- [27] N. T. Dantam, C. Nieto-Granda, H. Christensen, and M. Stilman, “[Linguistic Composition of Semantic Maps and Hybrid Controllers](#),” in *International Symposium on Experimental Robotics*, 2012, pp. 699–714.
- [28] N. T. Dantam and M. Stilman, “[The Motion Grammar Calculus for Context-Free Hybrid Systems](#),” in *American Control Conference*, 2012, pp. 5294–5301, **Best Presentation in Session**.

- [29] —, “[The Motion Grammar: Linguistic Perception, Planning, and Control](#),” in *Robotics: Science and Systems*, 2011.
- [30] N. T. Dantam, P. Kolhe, and M. Stilman, “[The Motion Grammar for Physical Human-Robot Games](#),” in *International Conference on Robotics and Automation*. IEEE, 2011, **SAIC/Georgia Tech Achievement Award**.
- [31] P. Kolhe, N. T. Dantam, and M. Stilman, “[Dynamic Pushing Strategies for Dynamically Stable Mobile Manipulators](#),” in *International Conference on Robotics and Automation*. IEEE, 2010.

## Workshop Papers

- [32] M. A. Schack and N. T. Dantam, “[Bayesian-Markov Feedback in Constraint-based Planning](#),” in *ICRA Workshop on Human-Robot Teaming Beyond Human Operational Speeds*, 2019.
- [33] N. T. Dantam, H. B. Amor, H. Christensen, and M. Stilman, “[Fault Recovery in Logical Manipulation Policies](#),” in *Workshop on Human versus Robot Grasping and Manipulation, RSS*, 2014.
- [34] A. Rouhani, N. T. Dantam, and M. Stilman, “Software-synthesis via  $ll^*$  for context-free robot programs,” in *4th Workshop on Formal Methods for Robotics and Automation, RSS*, 2013.
- [35] N. T. Dantam, M. Egerstedt, and M. Stilman, “[Make Your Robot Talk Correctly: Deriving Models of Hybrid System](#),” in *RSS Workshop on Grounding Human-Robot Dialog for Spatial Tasks*, 2011.

## Technical Reports

- [36] N. T. Dantam, S. Chaudhuri, and L. E. Kavraki, “[The Task Motion Kit](#),” Department of Computer Science, Rice University, Tech. Rep. TR16-12, 2016.
- [37] N. T. Dantam, I. Essa, and M. Stilman, “[Algorithms for Linguistic Robot Policy Inference from Demonstration of Assembly Tasks](#),” Georgia Institute of Technology, Tech. Rep. GT-GOLEM-2012-002, 2012.
- [38] N. T. Dantam and M. Stilman, “[Ach: IPC for Real-Time Robot Control](#),” Georgia Institute of Technology, Tech. Rep. GT-GOLEM-2011-003, 2011.
- [39] N. T. Dantam, P. Kolhe, and M. Stilman, “[Equations of Motion for Dynamically Stable Mobile Manipulators](#),” College of Computing. Georgia Institute of Technology, Tech. Rep. GT-GOLEM-2010-002, 2010.
- [40] N. T. Dantam and M. Stilman, “[The Motion Grammar: Linguistic Perception, Planning, and Control](#),” College of Computing. Georgia Institute of Technology, Tech. Rep. GT-GOLEM-2010-001, 2010.

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## IV. Professional Experience

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- 2017-** *Assistant Professor*, Colorado School of Mines, Golden, CO
- Led development of interdisciplinary [robotics graduate program](#)
- 2014-2017** *Postdoctoral Research Associate*, Rice University, Houston, TX
- Independent research.
  - Advised undergraduate students conducting research, leading to publication at Humanoids 2015.
  - Directed software development for planning and control on the Baxter and UR5 robots
- 2018-2014** *Research Assistant, Lab Manager*, Georgia Tech Humanoids Lab, Atlanta, GA
- Developed Real-Time IPC and control software for lab robots
  - Maintained Lab organization, infrastructure, and computing
  - Established LDAP/Kerberos/NFS services for Lab computing
- Summer 2010** *Robotics Research Intern*, iRobot, Bedford, MA
- Improved control performance of 510 PackBot EOD arm by implementing Singularity-Robust Jacobian Inverse Kinematics (IK)
  - Assisted transition of IK to production—including on all shipping PackBots
  - Developed dynamic model of PackBot arm for workspace force estimation and weight sensing
  - Developed prototype user display of PackBot arm jointspace and workspace forces
  - Interfaced iRobot Aware2 and Willow Garage ROS software suites
- Summer 2009** *Robotics Intern*, MIT Lincoln Laboratory, Lexington, MA
- Interfaced iRobot ATRV-Mini robot with Willow Garage ROS software suite
  - Developed local, reactive motion planner for ATRV and PackBot mobile robots using Potential Fields
  - Assisted system integration and demonstration
- Summer 2008** *Software Engineering Intern*, MIT Lincoln Laboratory, Lexington, MA
- Worked with end users to evaluate software design requirements
  - Developed web-based configuration tool for a Network Emulation Testbed using PHP/AJAX
- Spring 2008** *Web Developer*, C-SPAN Archives, West Lafayette, IN
- Improved Flash web video player, adding features and increasing stability

- Summer 2007**     *Research Assistant*, Purdue University, West Lafayette, IN
- Designed CAN bus and Ethernet based remote drive-by-wire system for hydrostatic transmission vehicle
  - Completed design of algorithm for conservative, on-the-fly, mostly-copying garbage collection
- Summer 2006**     *Software Engineering Intern*, Raytheon, Indianapolis, IN
- Evaluated Navy software on Windows NT, Linux, and HP-UX
  - Revised trade study document on Navy software
- 2006**     *Lab Instructor*, Purdue University, West Lafayette, IN
- Taught lab section of course in introductory C programming
- Summer 2005**     *IT Intern*, ContactSul, Camboriú, SC, Brazil
- Configured and deployed Debian GNU/Linux DNS, web, email, and file server
  - Prototyped web-based order system
- 2004-2008**     *Computer Science Tutor*, Purdue University, West Lafayette, IN
- Tutored undergraduates in courses covering C, C++, Java, and Compilers
- 2003-2004**     *Software Developer*, Delaware Machinery, Muncie, IN
- Developed LabView Code Interface Node for network access
  - Designed prototype web-based embedded tape reader emulator for CNC
  - Other embedded and web-based Java programming

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## V. Teaching

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### Graduated Thesis Advisees

**May 2020**     Kevin Barnard. M.S. in Robotics. *Probabilistic Constraints For Optimization-Based Motion Planning*.

### Courses

- 2020**
- Instructor. CSCI-400: Robot Planning and Manipulation. Colorado School of Mines.
  - Instructor. CSCI-534: Robot Planning and Manipulation. Colorado School of Mines.
  - Instructor. CSCI-561: Theory of Computation. Colorado School of Mines.
- 2019**
- Instructor. CSCI-498/598: Robot Planning and Manipulation. Colorado School of Mines.
  - Instructor. CSCI-561: Theory of Computation. Colorado School of Mines.
- 2018**
- Instructor. CSCI-498/598: Robot Planning and Manipulation. Colorado School of Mines.

- Instructor. CSCI-561: Theory of Computation. Colorado School of Mines.
- 2017** • Instructor. CSCI-561: Theory of Computation. Colorado School of Mines.
- 2015** • Guest Lecturer. Algorithmic Robotics. Rice University.
- 2013** • Guest Lecturer. Robot Intelligence: Planning in Action. Georgia Tech.
- 2012** • Guest Lecturer. Robot Intelligence: Planning in Action. Georgia Tech.
  - TA. Introduction to Perception and Robotics. Georgia Tech.
- 2011** • Volunteer. 2nd Grade Math Club. Hope-Hill Elementary School. Atlanta, GA.
- 2010** • TA. Introduction to Perception and Robotics. Georgia Tech.
- 2009** • TA. Building Humanoid Robots. Georgia Tech.
- 2006** • Lab Instructor. Introductory C Programming. Purdue University.

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## VI. Service and Community

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### Keynote / Plenary Presentations

- *Task-Motion Specification: Progress and Challenges*. International Conference on Robotics and Automation (ICRA), Workshop on Taking Reproducible Research in Robotics to the Mainstream. May 2019.
- *Performance and Evaluation of Task-Motion Planning*. Simulation Modeling and Programming for Autonomous Robots (SIMPAN 2018), Workshop on Combining Task And Motion Planning In The Frame Of Cloud Robotics.
- *Language, Logic, and Motion: Synthesizing Robot Software (invited)*. International Conference on Humanoid Robots, Towards Humanoid Robots OS Workshop. November 2016.
- *Incremental Task and Motion Planning*. Robotics: Science and Systems, Workshop on Task and Motion Planning. June 2016.

### Visiting Talks

- [Abstractions in Robot Planning](#). Technische Universität Berlin (virtual). April 1, 2021.
- *Abstractions in Robot Planning*. Contextual Robotics Institute, University of California San Diego (virtual). February 22, 2021.
- *Task and Motion Planning: Algorithms, Implementation, and Evaluation*. University of Zagreb, Faculty of Electrical Engineering and Computing. December 18, 2019.
- [Task and Motion Planning: Algorithms, Implementation, and Evaluation](#). University of Washington. October 18, 2019.
- *Task and Motion Planning: Algorithms, Implementation, and Evaluation*. University of New Mexico. March 3, 2019.

- *Task and Motion Planning: Algorithms, Implementation, and Evaluation*. Cornell University. October 09, 2018.
- *Grammars and Logic for Planning and Control*. Columbia University. March 27, 2014.

## Program and Editorial Activities

- 2020**
- Program Committee. Workshop on the Algorithmic Foundations of Robotics (WAFR 2020).
  - Associate Editor. International Conference on Robotics and Automation (ICRA 2021).
  - Program Committee. Workshop on the Algorithmic Foundations of Robotics (WAFR 2020).
  - Program Committee. AAAI. 2021.
- 2019**
- Associate Editor. Robotics and Automation Letters (RA-L).
  - Associate Editor. International Conference on Robotics and Automation (ICRA 2020).
  - Program Committee. International Conference on Planning and Scheduling (ICAPS 2019), special track on Robotics.
  - Program Committee. AAAI. 2020.
  - Program Committee. International Joint Conference on Artificial Intelligence (IJCAI 2019).
  - Program Committee. International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2019).
- 2018**
- Associate Editor. Robotics and Automation Letters (RA-L).
  - Program Committee. International Joint Conference on Artificial Intelligence (IJCAI 2016).
  - Program Committee and Respondent. Workshop on the Algorithmic Foundations of Robotics (WAFR 2018).
  - Guest Editor. Robotics and Autonomous Systems, Special Issue on Semantic Policy Representation.
- 2017**
- Editorial Board (Review Editor). Frontiers in Robotics and AI.
  - Associate Editor. Robotics and Automation Letters (RA-L).
  - Program Committee. International Joint Conference on Artificial Intelligence (IJCAI 2017).
  - Program Committee. AAAI 2018.
- 2016**
- Editorial Board (Review Editor). Frontiers in Robotics and AI.
  - Associate Editor. Robotics and Automation Letters (RA-L).
  - Program Committee. International Joint Conference on Artificial Intelligence (IJCAI 2016).
- 2015**
- Editorial Board (Review Editor). Frontiers in Robotics and AI.
  - Associate Editor. Robotics and Automation Letters (RA-L).
- 2014**
- Editorial Board (Review Editor). Frontiers in Robotics and AI.
- 2012**
- Program Committee. ROSCon.



## Workshop and Group Organization

- 2020** • Co-Organizer of Workshop on [Learning \(in\) Task and Motion Planning](#). Robotics: Science and Systems (RSS 2020).
- 2019** • Organizer of Workshop on [Robust Task and Motion Planning](#). Robotics: Science and Systems (RSS 2019).
- 2018** • Organizer of [Workshop on Exhibition and Benchmarking of Task and Motion Planners](#). Robotics: Science and Systems (RSS 2018).
  - Co-Organizer of Workshop on Semantic Policy and Action Representations. IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS).
- 2017** • Organizer of [Workshop on Task and Motion Planning](#). Robotics: Science and Systems (RSS 2016).
  - Co-Organizer of Workshop on Semantic Policy and Action Representations. IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS).
- 2016** • Organizer of [Workshop on Task and Motion Planning](#). Robotics: Science and Systems (RSS 2016).
- 2015** • Co-Organizer of Workshop on Semantic Policy and Action Representations. IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS).
- 2014** • Organizer of [Workshop on Policy Representation for Humanoid Robots](#), International Conference on Humanoid Robots (HUMANOIDS 2014).
- 2012** • Coordinator of ROS Special Interest Group on Inter-Process Communication.

## Open Source

TMKit	Extensible Framework for Task–Motion Planning <a href="http://tmkit.dyalab.org">http://tmkit.dyalab.org</a> Primary Developer
Amino	Robot utilities and modeling for planning and real-time control <a href="http://amino.dyalab.org">http://amino.dyalab.org</a> Primary Developer
Ach	Real-Time messaging IPC for POSIX (userspace) and Linux (kernel-space) <a href="https://github.com/golems/ach">https://github.com/golems/ach</a> Primary Developer
Motion Grammar Kit	Formal Language Tools for Robots <a href="https://github.com/golems/motion-grammar-kit">https://github.com/golems/motion-grammar-kit</a> Primary Developer
Sycamore	Fast, purely functional data structures in Common Lisp <a href="https://github.com/ndantam/sycamore">https://github.com/ndantam/sycamore</a> Primary Developer

S-Protobuf	Google Protocol Buffers in Common Lisp <a href="https://github.com/ndantam/s-protobuf">https://github.com/ndantam/s-protobuf</a> Primary Developer
CL-Python	<a href="https://common-lisp.net/project/clpython/">https://common-lisp.net/project/clpython/</a> Bug fixes
OMPL	Open Motion Planning Library <a href="https://ompl.kavrakilab.org/">https://ompl.kavrakilab.org/</a> Contributor: <ul style="list-style-type: none"><li>• Bug fixes for race conditions</li><li>• Integration tests</li><li>• Typing framework</li></ul>

### Journal and Conference Reviews

- 2020** • Robotics and Automation Letters (RA-L)
- 2019** • Transactions on Robotics (T-RO)  
• Robotics and Automation Letters (RA-L)  
• Journal for Autonomous Agents and Multi-Agent Systems (JAAMAS)  
• Autonomous Robots (AURO)  
• International Symposium on Robotics Research (ISRR)  
• Robotics: Science and Systems (RSS)  
• International Conference on Robotics and Automation (ICRA)  
• Conference on Robot Learning (CoRL)
- 2018** • International Journal of Robotics Research (IJRR)  
• Autonomous Robots (AURO)  
• Journal of Experimental & Theoretical Artificial Intelligence (JETAI)  
• Robotics and Automation Letters (RA-L)  
• Transactions on Automation Science and Engineering (T-ASE)  
• Transactions on Software Engineering (T-SE)  
• International Conference on Robotics and Automation (ICRA)
- 2017** • Transactions on Robotics (T-RO)  
• Robotics and Automation Letters (RA-L)  
• Autonomous Robots (AURO)  
• Journal of Experimental & Theoretical Artificial Intelligence  
• International Symposium on Robotics Research (ISRR)  
• International Conference on Robotics and Automation (ICRA)  
• Intelligent Robots and Systems (IROS)  
• International Conference on Humanoid Robots (Humanoids)

- 2016**
- International Journal of Robotics Research (IJRR)
  - Transactions on Robotics (T-RO)
  - Robotics and Automation Letters (RA-L)
  - Robotics and Automation Magazine (RAM)
  - Frontiers in Robotics and AI (FRAI)
  - Robotics: Science and Systems (RSS)
  - International Conference on Robotics and Automation (ICRA)
  - Intelligent Robots and Systems (IROS)
  - Conference on Automation Science and Engineering (CASE)
  - International Conference on Humanoid Robots (Humanoids)
  - Symposium on Robot and Human Interactive Communication (ROMAN)
  - Conference on Decision and Control (CDC)
- 2015**
- International Journal of Robotics Research (IJRR)
  - Transactions on Robotics (T-RO)
  - Robotics and Automation Letters (RA-L)
  - International Conference on Robotics and Automation (ICRA)
  - Intelligent Robots and Systems (IROS)
- 2014**
- Frontiers in Robotics and AI
  - International Conference on Robotics and Automation (ICRA)
  - Intelligent Robots and Systems (IROS)
  - International Conference on Humanoid Robots (Humanoids)
  - Multi-conference on Systems and Control (MSC)
- 2013**
- Transactions on Interactive Intelligent Systems (TiiS)
  - International Conference on Robotics and Automation (ICRA)
  - Intelligent Robots and Systems (IROS)
  - International Conference on Humanoid Robots (Humanoids)
- 2012**
- Transactions on Robotics (T-RO)
  - Discrete Event Dynamic Systems (DEDS)
  - International Conference on Robotics and Automation (ICRA)
  - Intelligent Robots and Systems (IROS)
- 2011**
- 2011 International Conference on Robotics and Automation (ICRA)
  - 2011 Conference on Automation Science and Engineering (CASE)

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## VII. Awards

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- Best Paper Finalist – International Conference on Humanoid Robots, 2014
- Mike Stilman Award Finalist – International Conference on Humanoid Robots, 2014
- Best Presentation in Session – American Control Conference, 2012
- Achievement Award – SAIC - Georgia Tech Student Paper Competition, 2011
- President’s Fellowship – Georgia Institute of Technology, 2008
- Poster Award – Purdue Undergraduate Research Symposium, 2007
- Academic Success Award – Purdue University, 2004-2008
- Indiana Resident Top Scholar – Purdue University, 2004-2008
- Dean’s Engineering Scholar – Purdue University, 2004
- Chemistry Contest Scholarship – American Chemical Society, 2003
- Caltech Signature Award – Indiana Academy for Science, Mathematics, and Humanities, 2003