

2018 BOARD NOMINEE

# Chad Jenkins

Associate Professor, Computing, Computer Science and Engineering  
University of Michigan



**CRA**  
Computing Research  
Association

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## Awards and Honors and Year Received

- ACM Senior Member (2017)
- The Karen T. Romer Prize for Undergraduate Advising and Mentoring, Brown University (2015)
- Sloan Research Fellowship, Alfred P. Sloan Foundation (2009)
- Presidential Early Career Award for Scientists and Engineers (PECASE, 2007)
- Young Investigator, Office of Naval Research (2006)

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## Involvement in CRA Activities

- Steering Committee Member, CRA URM+D Graduate Cohort (2017-Present)
- Contributor, CRA/CCC Robotics Roadmap (2008, 2012)

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## Other Relevant Experience

- Associate Professor, Computer Science / Robotics, University of Michigan (2015-Present)
- Editor-in-Chief, ACM Transactions on Human-Robot Interaction (2017-Present)
- Assistant/Associate Professor, Computer Science, Brown University (2004-15)
- Co-organizer, Conference for African-American Researchers in the Mathematical Sciences (CAARMS, 2017)
- Founder, Tapia Robotics Competition, ACM Tapia Celebration of Diversity in Computing (2007)

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## Research Interests

- Robotics
- Perception for Robot Manipulation
- Robot Learning from Demonstration

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## Personal Statement

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I am incredibly fortunate to have been part of computing's "out-innovating, out-educating, and out-building" over the last 25 years. The advancements of computing have surpassed any measure of return on investment. The need for sustained growth is clear, but combined with a sober rectification of past shortcomings. Funding for computing has neither kept up with the new realities of innovation and growth nor fully cultivated diversity and equal opportunity. My hope is to realize the mutual incentivization of equal opportunity and advanced innovation for future generations of computing professionals.

## Contact Information

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## Education

Ph.D.             Computer Science, University of Southern California, December 2003. Dissertation Title: *Data-driven Derivation of Skills for Autonomous Humanoid Agents*. Dissertation advisor: Prof. Maja J Matarić.

M.S.              Computer Science, Georgia Institute of Technology, June 1998. Master's project: *A Parameterization for Simulating Dynamic Human Basketball Shooting*. Project advisor: Prof. Jessica K. Hodgins.

B.S.              Computer Science and Mathematics, double major, cum laude, Alma College, April 1996.

## Professional Appointments

9/2015-           *Associate Professor*, Computer Science and Engineering Division, Electrical Engineering and Computer Science Department, University of Michigan, Ann Arbor, MI.

7/2010-8/2015   *Associate Professor*, Department of Computer Science, Brown University, Providence, RI.

7/2012-1/2013   *Visiting Research Scientist*, Willow Garage Inc., Menlo Park, CA.

7/2004-6/2010   *Assistant Professor*, Department of Computer Science, Brown University, Providence, RI.

11/2003-6/2004   *Postdoctoral Researcher*, Robotics Research Lab, Computer Science Department, University of Southern California, Los Angeles, CA.

8/1998-10/2003   *Graduate Research Assistant*, Computer Science Department, University of Southern California, Los Angeles, CA.

8/1997-6/1998   *Graduate Teaching Assistant*, College of Computing, Georgia Institute of Technology, Atlanta, GA.

6/1997-8/1997   *CAD Engineer/Intern*, Intel Corporation, Folsom, CA.

8/1996-6/1997   *Graduate Research Assistant*, Electronic Systems Lab, Georgia Tech Research Institute, Georgia Institute of Technology, Atlanta, GA.

5/1995-8/1995   *Systems Intern*, Ford Systems Integration Center, Ford Motor Company, Allen Park, MI.

- 5/1994-8/1994      *Undergraduate Research Intern*, PRISM Lab, Computer Science Engineering, University of Texas at Arlington, Arlington, TX.
- 8/1993-5/1996      *Resident Assistant*, Office of Student Affairs, Alma College, Alma, MI.

## Publications

### Books

- 2009                  M. McGuire and O. Jenkins. *Creating Games: Mechanics, Content, and Technology*. AK Peters, 2009.

### Chapters in Books

- 2010                  M. Vondrak, L. Sigal, and O. Jenkins. Dynamics and control of multibody systems. In *Motion Control*, pages 1–30. InTech, Jan 2010.
- 2009                  D. H. Grollman and O. C. Jenkins. Can we learn finite state machine robot controllers from interactive demonstration? In *From Motor to Interaction Learning in Robots*, pages 405–429. Springer, 2009.
- 2007                  E. Chang and O. C. Jenkins. Sketching articulation and pose for facial animation. In Z. Deng and U. Neumann, editors, *Data-Driven 3D Facial Animation*, chapter 8, pages 132–144. Springer, 2007.
- O. Jenkins, G. González, and M. Loper. Recognizing human pose and actions for interactive robots. In *Human-Robot Interaction*, chapter 6, pages 119–138. InTech, 2007.

### Refereed Journal Articles

- 2017                  J. E. Laird, K. Gluck, J. Anderson, K. D. Forbus, O. C. Jenkins, C. Lebiere, D. Salvucci, M. Scheutz, A. Thomaz, G. Trafton, et al. Interactive task learning. *IEEE Intelligent Systems*, 32(4):6–21, 2017.
- Z. Sui, L. Xiang, O. C. Jenkins, and K. Desingh. Goal-directed robot manipulation through axiomatic scene estimation. *International Journal of Robotics Research*, 36(1):86–104, 2017.
- 2013                  M. J. Buller, W. J. Tharion, S. N. Cheuvront, S. J. Montain, R. W. Kenefick, J. Castellani, W. A. Latzka, W. S. Roberts, M. Richter, O. C. Jenkins, and R. W. Hoyt. Estimation of human core temperature from sequential heart rate observations. *Physiological Measurement*, 34(7):781, 2013.
- M. Vondrak, L. Sigal, and O. C. Jenkins. Dynamical simulation priors for human motion tracking. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 35(1):52–65, 2013.
- 2012                  J. Bandouch, O. C. Jenkins, and M. Beetz. A self-training approach for visual tracking and recognition of complex human activity patterns. *International Journal of Computer Vision*, 99(2):166–189, 2012.
- S. Osentoski, B. Pitzer, C. Crick, G. Jay, S. Dong, D. Grollman, H. B. Suay, and O. C. Jenkins. Remote robotic laboratories for learning from demonstration. *International Journal of Social Robotics*, 4:1–13, June 2012.

- M. Vondrak, L. Sigal, J. Hodgins, and O. Jenkins. Video-based 3d motion capture through biped control. *ACM Transaction of Graphics (TOG) (Proceedings of ACM SIGGRAPH)*, 31(4), 2012.
- 2009 J. Butterfield, O. C. Jenkins, D. Sobel, and J. Schwertfeger. Modeling aspects of Theory of Mind with Markov Random Fields. *International Journal of Social Robotics*, 1(1):41–51, Jan 2009.
- 2008 O. C. Jenkins. Sparse control for high-DOF assistive robots. *Intelligent Service Robotics*, 1(2):123–134, Apr 2008.
- M. Nicolescu, O. Jenkins, A. Olenderski, and E. Fritzinger. Learning behavior fusion from demonstration. *Interaction Studies*, 9(2):319–352, Jun 2008.
- 2007 O. Jenkins, G. Gonzalez, and M. Loper. Interactive human pose and action recognition using dynamical motion primitives. *International Journal of Humanoid Robotics*, 4(2):365–385, Jun 2007.
- 2006 D. H. Grollman, O. C. Jenkins, and F. Wood. Discovering natural kinds of robot sensory experiences in unstructured environments. *Journal of Field Robotics*, 23(11-12):1077–1089, 2006.
- M. Katzourin, D. Ignatoff, L. Quirk, J. J. LaViola, and O. C. Jenkins. Sword-play: Innovating game development through VR. *IEEE Comput. Graph. Appl.*, 26(6):15–19, 2006.
- 2004 O. C. Jenkins and M. J. Matarić. Performance-derived behavior vocabularies: Data-driven acquisition of skills from motion. *International Journal of Humanoid Robotics*, 1(2):237–288, Jun 2004.
- 2002 A. Fod, M. Matarić, and O. Jenkins. Automated derivation of primitives for movement classification. *Autonomous Robots*, 12(1):39–54, Jan 2002.

### Edited Works

- 2015 J. J. LaViola and O. C. Jenkins. Natural user interfaces for adjustable autonomy in robot control. *IEEE Computer Graphics and Applications*, in press, 2015.
- 2010 J. Morimoto, O. Jenkins, and M. Toussaint. Robot learning in practice [from the guest editors]. *IEEE Robotics Automation Magazine*, 17(2):17–18, June 2010.

### Magazine Articles

- 2012 B. Alexander, K. Hsiao, O. C. Jenkins, J. Lee, B. Suay, and R. Toris. Robot Web Tools [ROS topics]. *IEEE Robotics & Automation Magazine*, 19(4):20–23, 2012.
- 2011 M. Anderson, O. C. Jenkins, and S. Osentoski. Recasting robotics challenges as experiments. *IEEE Robotics and Automation Magazine*, 18(2):10–11, Jun 2011.
- 2009 M. Anderson, O. Jenkins, and P. Oh. The 17th annual AAAI robot exhibition and manipulation and mobility workshop. *AI Magazine*, 30(1):95–102, 2009.
- Y. Kim, P. Oh, and O. Jenkins. The AAAI 2008 robotics and creativity workshop. *AI Magazine*, 30(1):103–107, 2009.
- 2006 E. Leland, O. C. Jenkins, and K. Bradford. Robosapien localization and control. *Circuit Cellar Magazine*, 188, Mar 2006. Honorable Mention, Freescale Semiconductor Zigbee Wireless Design Challenge.

**Opinion Editorials**

- 2013 O. Jenkins and A. Peseri. Automation, not domination: How robots will take over our world. Footnote1 opinion editorial: <http://footnote1.com/automation-not-domination-how-robots-will-take-over-our-world/>, Dec 2013.

**Patents**

C. V. Jones, O. C. Jenkins, M. M. Loper, *System and Method for Cooperative Remote Vehicle Behavior*, U.S. Patent 8577126, Nov. 5, 2013.

**Refereed Conference Papers**

- 2017 Z. Sui, Z. Zhou, Z. Zeng, and O. C. Jenkins. Sum: Sequential scene understanding and manipulation. In *International Conference on Intelligent Robots and Systems*, page in press, 2017.
- 2016 K. Desingh, O. C. Jenkins, L. Reveret, and Z. Sui. Physically plausible scene estimation for manipulation in clutter. In *IEEE-RAS International Conference on Humanoid Robots*, 2016.
- 2015 M. J. Buller, A. P. Welles, M. Stevens, J. Leger, A. Gribok, O. C. Jenkins, K. E. Friedl, and W. Rumlper. Automated guidance from physiological sensing to reduce thermal-work strain levels on a novel task. In *Wearable and Implantable Body Sensor Networks (BSN), 2015 IEEE 12th International Conference on*, pages 1–6. IEEE, 2015.
- Z. Sui, O. C. Jenkins, and K. Desingh. Axiomatic particle filtering for goal-directed robotic manipulation. In *IEEE Intelligent Robots and Systems*, pages 4429–4436, 2015.
- R. Toris, J. Kammerl, D. Lu, O. C. Jenkins, S. Osentoski, M. Wills, and S. Chernova. Robot Web Tools: Efficient messaging for cloud robotics. In *IEEE Intelligent Robots and Systems*, pages 4530–4537, 2015.
- L. Xiang, Z. Ren, M. Ni, and O. C. Jenkins. Robust graph slam in dynamic environments. In *IEEE Intelligent Robots and Systems*, pages 2543–2549, 2015.
- 2013 M. J. Buller, E. Sodomka, W. J. Tharion, C. Clements, R. W. Hoyt, and O. C. Jenkins. Policies to optimize work performance and thermal safety in exercising humans. In *Innovative Applications of Artificial Intelligence (IAAI)*, 2013.
- 2012 B. Pitzer, S. Osentoski, G. Jay, C. Crick, and O. C. Jenkins. PR2 remote lab: an environment for remote development and experimentation. In *International Conference on Robotics and Automation (ICRA 2012)*, pages 3200–3205, Minneapolis, MN, USA, May 2012.
- B. Thomas and O. C. Jenkins. Roboframenet: Verb-centric semantics for actions in robot middleware. In *International Conference on Robotics and Automation (ICRA 2012)*, pages 4750–4755, Minneapolis, MN, USA, May 2012.
- 2011 M. Buller, J. Castellani, W. Roberts, R. Hoyt, and O. C. Jenkins. Human thermoregulatory system state estimation using non-invasive physiological sensors. In *33rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC 11)*, pages 3290–3293, Barcelona, Spain, August 2011.

- C. Crick, S. Osentoski, G. Jay, and O. Jenkins. Human and robot perception in large-scale learning from demonstration. In *ACM/IEEE International Conference on Human-Robot Interaction (HRI 2011)*, 2011.
- M. Marge, A. Powers, J. Brookshire, G. T. Jay, O. C. Jenkins, and C. Geyer. Comparing heads-up, hands-free operation of ground robots to teleoperation. In *Proceedings of Robotics: Science and Systems*, Los Angeles, CA, USA, June 2011.
- S. Osentoski, G. Jay, C. Crick, B. Pitzer, C. DuHadway, and O. Jenkins. Robots as web services: Reproducible experimentation and application development using rosjs. In *International Conference on Robotics and Automation (ICRA 2011)*, 2011.
- 2010 M. Buller, W. Tharion, R. Hoyt, and O. Jenkins. Estimation of human internal temperature from wearable physiological sensors. In *Innovative Applications in Artificial Intelligence*, Atlanta, GA, 2010.
- M. Buller, A. Welles, O. Jenkins, and R. Hoyt. Extreme health sensing: the challenges, technologies, and strategies for active health sustainment of military personnel during training and combat missions. In *SPIE Sensors, and Command, Control, Communications, and Intelligence (C3I) Technologies for Homeland Security and Homeland Defense IX (Conference 7666)*, Orlando, FL, 2010.
- J. Butterfield, S. Osentoski, G. Jay, and O. Jenkins. Learning from demonstration using a multi-valued function regressor for time-series data. In *IEEE-RAS International Conference on Humanoid Robots (Humanoids 2010)*, pages 328–333, 2010.
- D. H. Grollman and O. C. Jenkins. Incremental learning of subtasks from unsegmented demonstration. In *International Conference on Intelligent Robots and Systems (IROS 2010)*, pages 261–266, Taipei, Taiwan, Oct 2010.
- 2009 M. Loper, N. Koenig, S. Chernova, O. Jenkins, and C. Jones. Mobile human-robot teaming with environmental tolerance. In *Human-Robot Interaction (HRI 2009)*, pages 157–164, San Diego, CA, USA, Mar 2009.
- A. Steinfeld, O. Jenkins, and B. Scassellati. The Oz of Wizard: Simulating the human for interaction research. In *Human-Robot Interaction (HRI 2009)*, pages 101–108, San Diego, CA, USA, Mar 2009.
- 2008 J. Butterfield, B. Gerkey, and O. Jenkins. Multi-robot Markov Random Fields. In *Autonomous Agents and Multi Agent Systems (AAMAS 2008)*, pages 1211–1214, Estoril, Portugal, May 2008.
- D. H. Grollman and O. C. Jenkins. Sparse incremental learning for interactive robot control policy estimation. In *International Conference on Robotics and Automation (ICRA 2008)*, pages 3315–3320, Pasadena, CA, USA, May 2008.
- O. C. Jenkins. Markov Random Fields models for multi-robot teams in cyber-physical systems (4 pages). In *International Conference on Intelligent Robots and Systems (IROS 2008), Special Session on Cyber Physical Systems*, Nice, France, Sep 2008.

- A. Tsoli and O. C. Jenkins. Neighborhood denoising for learning high-dimensional grasping manifolds. In *International Conference on Intelligent Robots and Systems (IROS 2008)*, pages 3680–3685, Nice, France, Sep 2008.
- M. Vondrak, L. Sigal, and O. Jenkins. Physical simulation for probabilistic motion tracking. In *Computer Vision and Pattern Recognition (CVPR 2008)*, pages 1–8, Anchorage, AK, USA, Jun 2008.
- 2007 D. Grollman and O. Jenkins. Dogged learning for robots. In *International Conference on Robotics and Automation (ICRA 2007)*, pages 2483–2488, Rome, Italy, Apr 2007.
- D. Grollman and O. Jenkins. Learning elements of robot soccer from demonstration. In *International Conference on Development and Learning (ICDL 2007)*, pages 276–281, London, England, Jul 2007.
- O. Jenkins, G. González, and M. Loper. Tracking human motion and actions for interactive robots. In *Human-Robot Interaction (HRI 2007)*, pages 365–372, Arlington, VA, USA, Mar 2007.
- M. Nicolescu, O. Jenkins, and A. Stanhope. Fusing robot behaviors for human-level tasks. In *International Conference on Development and Learning (ICDL 2007)*, pages 76–81, London, England, Jul 2007.
- J. Schwertfeger and O. Jenkins. Multi-robot belief propagation for distributed robot allocation. In *International Conference on Development and Learning (ICDL 2007)*, pages 193–198, London, England, Jul 2007.
- 2006 O. Jenkins, R. Bodenheimer, and R. Peters. Manipulation manifolds: Explorations into uncovering manifolds in sensory-motor spaces (8 pages). In *International Conference on Development and Learning (ICDL 2006)*, Bloomington, IN, USA, May-Jun 2006.
- O. C. Jenkins. 2D subspaces for sparse control of high-DOF robots. In *Intl. Conference of the IEEE Engineering in Medicine and Biology Society (EMBC 2006)*, pages 2722–2725, New York, NY, USA, Aug-Sep 2006.
- R. Peters, O. Jenkins, and R. Bodenheimer. Sensory-motor manifold structure induced by task outcome: Experiments with Robonaut. In *IEEE International Conference on Humanoid Robotics (Humanoids 2006)*, pages 484–489, Genoa, Italy, Dec 2006.
- 2005 R. A. Peters and O. C. Jenkins. Uncovering manifold structures in Robonaut’s sensory-data state space. In *IEEE International Conference on Humanoid Robotics (Humanoids 2005)*, pages 369–374, Tsukuba, Japan, Dec 2005.
- 2004 W. Bluethmann, R. Ambrose, M. Diftler, E. Huber, A. Fagg, M. Rosenstein, R. Platt, R. Grupen, C. Breazeal, A. Brooks, A. Lockerd, R. A. Peters, O. C. Jenkins, M. J. Matarić, and M. Bugajska. Building an autonomous humanoid tool user. In *IEEE International Conference on Humanoid Robots (Humanoids 2004)*, pages 402–421, Nov 2004.
- E. Drumwright, O. C. Jenkins, and M. J. Matarić. Exemplar-based primitives for humanoid movement classification and control. In *IEEE International Conference on Robotics and Automation*, pages 140–145, New Orleans, LA, USA, Apr 2004.

- O. C. Jenkins and M. J. Matarić. A spatio-temporal extension to Isomap nonlinear dimension reduction. In *The International Conference on Machine Learning (ICML 2004)*, pages 441–448, Banff, Alberta, Canada, Jul 2004.
- N. Miller, O. C. Jenkins, M. Kallmann, and M. J. Matarić. Motion capture from inertial sensing for untethered humanoid teleoperation. In *IEEE International Conference on Humanoid Robots (Humanoids 2004)*, pages 547–565, Nov 2004.
- 2003 C.-W. Chu, O. C. Jenkins, and M. J. Matarić. Markerless kinematic model and motion capture from volume sequences. In *IEEE Computer Vision and Pattern Recognition (CVPR 2003)*, pages II: 475–482, Madison, Wisconsin, USA, Jun 2003.
- D. Erol, J. Park, E. Turkay, K. Kawamura, O. Jenkins, and M. Matarić. Motion generation for humanoid robots with automatically derived behaviors. In *IEEE Systems, Man, and Cybernetics (SMC 2003)*, pages 1816–1822, Washington, DC, USA, Oct 2003.
- O. C. Jenkins and M. J. Matarić. Automated derivation of behavior vocabularies for autonomous humanoid motion. In *Autonomous Agents and Multiagent Systems (AAMAS 2003)*, pages 225–232, Melbourne, Australia, Jul 2003.
- 2002 O. C. Jenkins and M. J. Matarić. Deriving action and behavior primitives from human motion data. In *IEEE Intelligent Robots and Systems (IROS 2002)*, volume 3, pages 2551–2556, Lausanne, Switzerland, Oct 2002.
- 2000 A. Fod, M. Matarić, and O. Jenkins. Automated derivation of primitives for movement classification. In *IEEE-RAS International Conference on Humanoid Robots (Humanoids 2000)*, Cambridge, MA, USA, Oct 2000.
- O. C. Jenkins, M. Matarić, and S. Weber. Primitive-based movement classification for humanoid imitation. In *IEEE International Conference on Humanoid Robots (Humanoids 2000)*, Cambridge, MA, USA, Oct 2000.

### Refereed Conference Abstracts and Videos

- 2014 B. Argall, S. Chernova, K. K. Hauser, and O. C. Jenkins. Workshop on algorithmic human-robot interaction. In *ACM/IEEE International Conference on Human-Robot Interaction, HRI 2013, Tokyo, Japan, March 3-6, 2013*, page 503, 2014.
- 2008 D. Byers, M. Lapping-Carr, J. Kumar, T. Hinkle, D. Grollman, and O. Jenkins. Brown Robotics: Game-based learning. In *HRI 2008 Video Program*, Amsterdam, Netherlands, Mar 2008.
- D. Byers, M. Lapping-Carr, J. Kumar, T. Hinkle, D. Grollman, and O. Jenkins. Game-based robot learning. In *AAAI 2008 Video Program (Best Student Video)*, Chicago, IL, USA, Jul 2008.
- N. Koenig, S. Chernova, C. Jones, M. Loper, and O. Jenkins. Hands-free human-robot interaction. In *AAAI 2008 Video Program*, Chicago, IL, USA, Jul 2008.
- N. Koenig, S. Chernova, C. Jones, M. Loper, and O. Jenkins. Hands-free human-robot interaction. In *HRI 2008 Video Program*, Amsterdam, Netherlands, Mar 2008.
- 2007 M. Kostandov, J. Schwertfeger, O. Jenkins, R. Jianu, M. Buller, D. Hartmann, M. Loper, A. Tsoli, M. Vondrak, and W. Zhou. Robot gaming and learning

- using augmented reality. In *ACM SIGGRAPH Technical Posters*, San Diego, CA, USA, Aug 2007.
- 2006 S.-P. Kim, J. Simeral, O. Jenkins, J. Donoghue, and M. Black. Finding directional movement representations in motor cortical neural populations using non-linear manifold learning. In *World Congress on Medical Physics and Biomedical Engineering 2006*, Seoul, Korea, Aug 2006.
- P. Wrotek, O. Jenkins, and M. McGuire. World space servoing for character animation under simulation. In *ACM SIGGRAPH Technical Sketches*, Boston, MA, USA, Aug 2006.
- 2005 O. C. Jenkins and C. I. Swepson. Keyframing by segmentation of kinematic motion. In *ACM Symposium on Computer Animation Posters (SCA 2005)*, 2005.
- J. Mallios, N. Mehta, C. Street, and O. C. Jenkins. Modular dynamic response from motion databases. In *SIGGRAPH 2005 Posters*, 2005.
- 2000 S. Weber, M. Matarić, and O. Jenkins. Imitation using perceptuo-motor primitives. In *Autonomous Agents*, pages 136–137, Barcelona, Spain, 2000.

#### Refereed Workshop and Symposia Papers

- 2016 K. Desingh, M. Maghoumi, O. C. Jenkins, J. J. LaViola, and L. Reveret. Object manipulation in cluttered scenes informed by physics and sketching. In *Robotics: Science and Systems 2016 Workshop on Geometry and Beyond - Representations, Physics, and Scene Understanding for Robotics*, 2016.
- Z. Sui, Z. Zhou, and O. C. Jenkins. Goal-directed manipulation of objects in contact-based clutter through probabilistic pose estimation. In *IJCAI 2016 Workshop on Workshop on Autonomous Mobile Service Robots*, 2016.
- 2015 Z. Sui, O. C. Jenkins, and K. Desingh. Axiomatic scene estimation for robotic manipulation. In *IEEE ICRA 2015 Workshop on Robotic Hands*, 2015.
- 2014 J. K. Lee and O. C. Jenkins. Goal-based teleoperation for robot manipulation. In *AAAI Fall Symposium on Artificial Intelligence and Human-Robot Interaction*, Washington DC, USA, Nov 2014.
- J. G. Raiti, O. C. Jenkins, and A. Lux-Fawzi. Empower: Enhanced movement and physical-augmentation through web-enabled robots. In *AAAI Fall Symposium on Artificial Intelligence and Human-Robot Interaction*, Washington DC, USA, Nov 2014.
- 2011 C. Crick, G. T. Jay, S. Osentoski, B. Pitzer, and O. C. Jenkins. rosbridge: Ros for non-ros users. In *International Symposium on Robotics Research (ISRR 2011)*, Flagstaff, AZ, USA, August 2011.
- G. T. Jay, P. Beeson, and O. C. Jenkins. Beat-based gesture recognition for non-secure, far-range, or obscured perception scenarios. In *IJCAI 2011 Workshop on Space, Time and Ambient Intelligence*, Barcelona, Spain, July 2011.
- B. Thomas and O. C. Jenkins. Verb semantics for robot dialog. In *Robotics: Science and Systems Workshop on Grounding Human-Robot Dialog for Spatial Tasks*, Los Angeles, CA, USA, June 2011.

- 2010 S. Osentoski, G. Jay, C. Crick, and O. Jenkins. Brown ros package: Reproducibility for shared experimentation and learning from demonstration. In *AAAI-10 Robot Workshop*, Atlanta, GA, 2010.
- S. Osentoski, G. Jay, C. Crick, and O. Jenkins. Crowdsourcing for closed loop control. In *NIPS Workshop on Computational Social Science and the Wisdom of Crowds*, 2010.
- 2009 D. H. Grollman and O. C. Jenkins. Multimap regression for perceptual aliasing in learning finite state machine robot controllers from interactive demonstration. In *Robotics: Science and Systems Workshop on Regression in Robotics*, Seattle, Washington, USA, June 2009.
- 2008 J. Butterfield, K. Dantu, B. Gerkey, O. Jenkins, and G. Sukhatme. Autonomous biconnected networks of mobile robots. In *Wireless Multihop Communications in Networked Robotics*, pages 640–646, Berlin, Germany, April 2008.
- D. Grollman and O. C. Jenkins. Learning multi-objective robot control policies from demonstration. In *International Conference on Intelligent Robots and Systems Workshop on Robot Learning*, Nice, France, Sep 2008.
- N. Koenig, S. Chernova, C. Jones, M. Loper, and O. Jenkins. Hands-free interaction for human-robot teams. In *ICRA 2008 Workshop on Social interaction with intelligent indoor robots*, Pasadena, CA, USA, May 2008.
- M. Lapping-Carr, O. Jenkins, D. Grollman, J. Schwertfeger, and T. Hinkle. Wiimote interfaces for lifelong robot learning. In *AAAI Symposium on Using AI to Motivate Greater Participation in Computer Science*, Palo Alto, CA, USA, Mar 2008.
- A. Tsoli and O. C. Jenkins. Learning 2D subspaces for user-controlled robot grasping. In *International Conference on Intelligent Robots and Systems Workshop on Robot Learning*, Nice, France, Sep 2008.
- 2007 B. Dickinson, O. Jenkins, M. Moseley, D. Bloom, and D. Hartmann. Roomba Pac-Man: Teaching autonomous robotics through embodied gaming. In *AAAI Symposium on Robot and Robot Venues: Resources for AI Education*, pages 35–39, Palo Alto, CA, USA, Mar 2007.
- D. H. Grollman and O. C. Jenkins. Learning robot soccer from demonstration: Ball grasping. In *Robotics: Science and Systems - Robot Manipulation: Sensing and Adapting to the Real World*, Jun 2007.
- D. H. Grollman and O. C. Jenkins. (machine) learning robot control policies. In *NIPS 2007 Workshop on Robotics challenges for Machine Learning*, Whistler, BC, Canada, Dec 2007.
- A. Tsoli and O. Jenkins. 2D subspaces for user-driven robot grasping. In *Robotics: Science and Systems - Robot Manipulation: Sensing and Adapting to the Real World*, Jun 2007.
- A. Tsoli and O. Jenkins. Robot grasping for prosthetic applications. In *International Symposium of Robotics Research (ISRR2007)*, Nov 2007.
- 2006 E. Chang and O. Jenkins. Sketching articulation and pose for facial animation. In *ACM SIGGRAPH/Eurographics Symposium on Computer Animation (SCA 2006)*, Vienna, Austria, Sep 2006.

- O. Jenkins, G. González, and M. Loper. Learning dynamical motion vocabularies for kinematic tracking and activity recognition. In *CVPR 2006 Workshop on Vision for Human-Computer Interaction*, New York, NY, USA, Jun 2006.
- O. Jenkins, G. González, and M. Loper. Monocular virtual trajectory estimation with dynamical primitives. In *AAAI 2006 Cognitive Robotics Workshop*, Boston, MA, USA, Jul 2006.
- O. Jenkins, R. Peters, and R. Bodenheimer. Uncovering success in manipulation. In *Robotics: Science and Systems Workshop on Manipulation in Human Environments*, Philadelphia, PA, USA, Aug 2006.
- M. Nicolescu, O. Jenkins, and A. Olenderski. Learning behavior fusion estimation from demonstration. In *IEEE International Symposium on Robot and Human Interactive Communication (RO-MAN 2006)*, Hatfield, United Kingdom, Sep 2006.
- M. Nicolescu, O. C. Jenkins, and A. Olenderski. Behavior fusion estimation for robot learning from demonstration. In *IEEE Workshop on Distributed Intelligent Systems (DIS'06)*, pages 31–36, Prague, Czech Republic, 2006.
- P. Wrotek, O. Jenkins, and M. McGuire. Dynamo: Dynamic data-driven character control with adjustable balance. In *ACM SIGGRAPH Video Game Symposium*, Boston, MA, USA, Jul 2006.
- 2005 D. H. Grollman, O. C. Jenkins, and F. Wood. Discovering natural kinds of robot sensory experiences in unstructured environments. In *NIPS 2005 Workshop on Machine Learning Based Robotics in Unstructured Environments*, Whistler, BC, Canada, Dec 2005.
- O. C. Jenkins. Data-driven motion modeling from kinematic time-series. In *NIPS 2005 Workshop on Activity Recognition and Discovery*, Whistler, BC, Canada, Dec 2005.
- 2004 O. C. Jenkins, M. N. Nicolescu, and M. J. Matarić. Autonomy and supervision for robot skills and tasks learned from demonstration. In *AAAI-04 Workshop on Supervisory Control of Learning and Adaptive Systems*, 2004.
- 2001 O. C. Jenkins and M. J. Matarić. Primitives and behavior-based architectures for interactive entertainment. In *AAAI Spring Symposium on AI and Interactive Entertainment*, Stanford, CA, USA, Mar 2001.
- 2000 M. J. Matarić, O. C. Jenkins, A. Fod, and V. B. Zordan. Control and imitation in humanoids. In *AAAI Fall Symposium on Simulating Human Agents*, North Falmouth, MA, USA, Nov 2000.

### Technical Pre-prints and Reports

- 2017 Z. Sui, Z. Zhou, Z. Zeng, and O. C. Jenkins. Sum: Sequential scene understanding and manipulation. *arXiv preprint arXiv:1703.07491*, 2017.
- Z. Zeng, Z. Zhou, Z. Sui, and O. C. Jenkins. Scene-level programming by demonstration. *arXiv preprint arXiv:1704.01189*, 2017.
- 2005 D. H. Grollman, O. C. Jenkins, and F. Wood. Extensible data-driven classification of robot sensor data. Technical Report Technical Report, cs05-11, Brown Computer Science Department, Jul 2005.

- M. M. Loper and O. C. Jenkins. Real-time silhouette intersection by maintaining the distribution of occupancy. Technical Report Technical Report, cs05-12, Brown Computer Science Department, Jul 2005.
- 2004 O. C. Jenkins, C.-W. Chu, and M. J. Matarić. Nonlinear spherical shells for approximate principal curve skeletonization. Technical Report Technical Report, CRES-04-004, USC Center for Robotics and Embedded Systems, Feb 2004.
- N. Miller, O. C. Jenkins, M. Kallmann, and M. J. Matarić. Motion capture from inertial sensing for untethered humanoid teleoperation. Technical Report Technical Report, CRES-04-010, USC Center for Robotics and Embedded Systems, Jun 2004.
- 2003 O. C. Jenkins. Relative localization from pairwise distance relationships using kernel pca. Technical Report CRES-03-010, Center for Robotics and Embedded Systems, University of Southern California, Apr 2003.
- 2002 C.-W. Chu, O. C. Jenkins, and M. J. Matarić. Converting sequences of human volumes into kinematic motion. Technical Report CRES-02-003, Center for Robotics and Embedded Systems, University of Southern California, Sep 2002.
- O. C. Jenkins and M. J. Matarić. Modularization of human motion into actions and behaviors. Technical Report CRES-02-002, Center for Robotics and Embedded Systems, University of Southern California, Sep 2002.
- 2000 O. C. Jenkins, M. J. Matarić, and S. Weber. Primitive-based movement classification for humanoid imitation. Technical Report IRIS-00-385, Institute for Robotics and Intelligent Systems, University of Southern California, 2000.

### Keynote and Plenary Talks

*“Perception of People and Scenes for Robot Learning from Demonstration”*

at 2017 International Joint Conference on Neural Networks (IJCNN 2017), Anchorage, AK, USA, May 18, 2017

*“Three Things to Remember from the 10 Fac Commandments”*

at 2016 NextProf Fall Engineering Workshop, Ann Arbor, MI, USA, September 29, 2016

*“Goal-directed Robot Manipulation via Axiomatic Scene Estimation”*

at 2016 Conference for African American Researchers in the Mathematical Sciences (CAARMS), Princeton, NJ, USA, June 16, 2016

*“Robotics to Reach Out and Change the World”*

at 2015 Conference for African American Researchers in the Mathematical Sciences (CAARMS), Providence, RI, USA, June 26, 2015

at 2015 Lifelong Learning Collaborative Convocation Address, Providence, RI, USA, February 26, 2015

at 2015 Richard Tapia Celebration of Diversity in Computing, Boston, MA, USA, February 19, 2015

at 2014 High Impact Technology Exchange Conference, Chicago, IL, USA, July 23, 2014

*“Cool Jobs in Robotics”*

at 2014 World Science Festival, New York, NY, USA, June 1, 2014 (with M. Jenkins)

*“rosbridge: Towards a World Wide Web for Robotics”*

at 2013 RoboCup Symposium, Eindhoven, Netherlands, July 1, 2013

*“From Video Games to Robots: My Path into Computer Science”*

at 2012 ARTSI Student Research Conference, Norfolk State University, Norfolk, VA, USA, March 23, 2012

**Invited K-12 Talks**

*“Careers in Robotics”*

at The Learning Community, Central Falls, RI, USA, March, 19, 2014

*“Robot Soccer and Video Games: Careers, Technology, and Fun”*

at The Paul Cuffee School, Providence, RI, USA, June, 6, 2006

at The Met Center High School, Providence, RI, USA, May, 15, 2006

at San Miguel Middle School, Providence, RI, USA, March, 8, 2006

*“Careers in Video Games and Digital Media”*

at Washington Prep High School, Los Angeles, CA, USA, June 8, 2002

**Distinguished Lectures**

*“Perception of People and Scenes for Robot Learning from Demonstration”*

at Columbia University, New York, NY, USA, November 16, 2016

**Invited Talks**

*“Perception of People and Scenes for Robot Learning from Demonstration”*

at Control Seminar, University of Michigan, Ann Arbor, MI, USA, November 18, 2016

*“Robotics to Reach Out and Change the World”*

at Medgar Evers College, Brooklyn, NY, USA, February 6, 2017

at Alma College, Alma, MI, USA, December 1, 2016

at Lewis and Clark College, Portland, OR, USA, October 11, 2016

*“Goal-Directed Manipulation through Axiomatic Scene Estimation”*

at Robotics: Science and Systems Workshop on Model Learning for Human-Robot Communication, Ann Arbor, MI, USA, June 19, 2016

*“What is Scientific about the Robots for Humanity?”*

at Robotics: Science and Systems Workshop on Socially and Physically Assistive Robotics for Humanity, Ann Arbor, MI, USA, June 18, 2016

*“Perception of People and Scenes for Robot Learning from Demonstration”*

at CSE Seminar, Texas A&M University, College Station, TX, USA, April 6, 2016

at CSE Seminar, University of Michigan, Ann Arbor, MI, USA, April 2, 2015

*“Meet the Robots for Humanity”*

at TEDxMidAtlantic 2013, Washington, D.C., USA, October 26, 2013. (with H. Evans)

*“Reach Out and Change the World: Robots Among Us”*

at National Geographic Explorers Symposium, National Geographic Society, Washington, D.C., USA, June, 8, 2013. (with R. Toris)

*“rosbridge: Towards a World Wide Web for Robotics”*

at Rutgers University, Piscataway, NJ, USA, September 22, 2014

at Graduate School of Oceanography, University of Rhode Island, Narragansett, RI, USA, September 26, 2013

at Intelligent Robotics Group, NASA Ames, Moffett Field, CA, USA, January 29, 2013

at NASA-DRL Distinguished Lecture Series, Johnson Space Center, Houston, TX, USA, April 20, 2012

at GRASP Seminar, University of Pennsylvania, Philadelphia, PA, USA, April 13, 2012

*“Physically Plausible Human Motion Understanding for Human-Robot Teams”*

at School of Interactive Computing, Georgia Institute of Technology, Atlanta, GA, USA, February 6, 2012

at CSE Seminar, University of Michigan, Ann Arbor, MI, USA, January 25, 2012

at USC Futures of Robotics Symoisum, University of Southern California, Los Angeles, CA, USA, December 7, 2012

at US-China Symposium on Human-Robot Interaction, Tsinghua University, Beijing, China, October 21, 2012

*“Robot Enabled Cloud: Robots as Web Services”* (also titled *“rosbridge: ROS for non-ROS users”*)

at RoboBusiness Summit 2011, Boston, MA, USA, November 3, 2011

at AAAI Workshop on Plan, Activity, and Intent Recognition, San Francisco, CA, USA, August 7, 2011

at Robotics: Science and Systems Workshop on Human-Robot Interaction, University of Southern California, Los Angeles, CA, USA, July 1, 2011

at Robotics: Science and Systems Workshop Imitation Learning, University of Southern California, Los Angeles, CA, USA, June 27, 2011

at ARTSI Faculty Summit, University of Alabama, Tuscaloosa, AL, USA, June, 20, 2011

at Computer Science Colloquium, Texas A&M University, College Station, TX, USA, April 20, 2011

at Seminar, Willow Garage, Menlo Park, CA, USA, April 16, 2010

at IAS Seminar, TU-Munich, Munich, Germany, March 11, 2011

*“Learning The Foundations for Humanoid Autonomy”*

at National Academy of Engineering Gilbreth Lecture, Washington, DC, USA, February 16, 2010

*“Can We Crowdfsource Your Robot?”*

at RIM Seminar, Georgia Institute of Technology, Atlanta, GA, USA, September 21, 2012

at Computer Science Colloquium, George Washington University, Washington, DC, USA, November 10, 2010

at Robotics Engineering Seminar, Worcester Polytechnic Institute, Worcester, MA, USA, October 25, 2010

at Google, Mountain View, CA, USA, March 24, 2010

*“Challenges for Evaluation in Mobile Robotic Manipulation”*

at Robotics: Science and Systems Workshop on Mobile Manipulation in Human Environments, University of Washington, Seattle, WA, USA, June, 28, 2009

*“Beyond Pairwise Similarity Kernels: Will Learning Become The Path of Least Resistance?”*

at Robotics: Science and Systems Workshop on Bridging the gap between high-level discrete representations and low-level continuous behaviors, University of Washington, Seattle, WA, USA, June, 28, 2009

*“Robot Learning from Multivalued Demonstration”*

at Institute of Automatic Control Engineering, Department of Electrical Engineering and Information Technology, Technical University of Munich, Munich, Germany, October 10, 2008

at IROS Workshop: Robotics Challenges for Machine Learning II, Nice, France, September 22, 2008

*“Learning in Human-Robot Teams” (also titled Manifold Learning in Human-Robot Teams)*

at Computer Science Colloquium, Texas A&M University, College Station, TX, USA, April 21 2010

at Computer Science Colloquium, Rice University, Houston, TX, USA, April 20, 2010

at Computer Science Colloquium, Stevens Institute of Technology, Hoboken, NJ, USA, January 25, 2010

at Computer Science Colloquium, Yale University, New Haven, CT, USA, October 29, 2009

at IEEE Robotics and Automation Society Boston, Olin College, Needham, MA, USA, September 8, 2009

at Computer Science Colloquium, University of Southern California, Los Angeles, CA, USA, January 5, 2009

at Robotics Seminar Series, Computer Science and Artificial Intelligence Laboratory, Massachusetts Institute of Technology, Cambridge, MA, USA, December 2, 2008

at Robotics and Intelligent Machines Seminar, College of Computing, Georgia Institute of Technology, Atlanta, GA, USA, November 19, 2008

at Columbia Vision and Graphics Center Distinguished Lecture Series, Department of Computer Science, Columbia University, New York, NY, USA, November 13, 2008

at Computer Science Colloquium, School of Engineering and Applied Sciences, Harvard University, Cambridge, MA, USA, October 23, 2008

at Intelligent Autonomous Systems Group, Computer Science Department, Technical University of Munich, Garching, Germany, October 16, 2008

at Department of Robotic Systems, German Aerospace Center (DLR), Oberpfaffenhofen-Wessling, Germany, October 13, 2008

at CoTeSys International Workshop on Cognition for Technical Systems, Munich, Germany, October 6, 2008

at Forum for Artificial Intelligence, Department of Computer Science, University of Texas at Austin, Austin, TX, USA, September 11, 2008

at Computer Science Department, University of Minnesota, Minneapolis, MN, USA, September 8, 2008

at Willow Garage, Palo Alto, CA, USA, August 12, 2008

at Orthopaedic Research Seminar, Brown University Medical School, Providence, RI, USA, March 12, 2008

at Robotics Institute Seminar, Carnegie Mellon University, Pittsburgh, PA, USA, February 15, 2008

*“Brown University Robotics: A Review Worth 1,000,000 Words”*

at Center for Healthcare Robotics, Health Systems Institute, Atlanta, GA, USA, October 12, 2007

*“Innate and Adaptive Behavior in Lifelong Robot Learning”*

at Performance Metrics for Intelligent Systems Workshop, Gaithersburg, MD, USA, August 29, 2007

*“Multi-Robot Belief Propagation”*

at R:SS Workshop on Robotic Sensor Networks: Principles and Practice, Robotics:Science and Systems, Atlanta, GA, USA, June 30, 2007

*“Manifolds on the Brain”*

at NIPS Workshop on Novel Applications of Dimension Reduction, Neural Information Processing Systems, Whistler, BC, Canada, December 9, 2006

*“Dynamic Motion Capture with Adjustable Character Balance”*

at Interactive Media and Game Development Seminar, Computer Science Department, Worcester Polytechnic Institute, Worcester, MA, USA, November 30, 2006

at Intel Research, Santa Clara, CA, USA, August 12, 2006

*“Learning to Bridge the Human-Robot Divide”*

at Control, Instrumentation and Robotics Seminar, Mechanical Engineering Department, Massachusetts Institute of Technology, Cambridge, MA, USA, November 16, 2006

at GRASP Lab Seminar, University of Pennsylvania, Philadelphia, PA, USA, November 10, 2006

at R:SS Socially Assistive Robotics Workshop, Robotics: Science and Systems, Philadelphia, PA, USA, August 19, 2006

*“Learning the Foundations for Humanoid Autonomy”*

at Machine Vision Colloquium, Massachusetts Institute of Technology, Cambridge, MA, USA, February 13, 2006

*“Learning the Foundations for Humanoid Autonomy”*

at National Academies of Engineering Fifth Japan-America Frontiers of Engineering Symposium, San Jose, CA, USA, November 3, 2005

*“Robot Learning from Demonstration through the Capture and Analysis of Human Motion”*

at MOVI Research Group, INRIA Rhone-Alpes, Grenoble, France, April 12, 2006

at iRobot Corporation, Burlington, MA, USA, November 21, 2005

at Computer Science Colloquium, University of Massachusetts Lowell, Lowell, MA, USA, October 18, 2005

at Computer Science and Engineering Colloquium, University of Washington in St. Louis, St. Louis, MO, USA, October 7, 2005

at Robotics Group, University of Massachusetts Amherst, Amherst, MA, USA, September 30, 2005

*“Embodying Human Motion”*

at MOVI Research Group, INRIA Rhone-Alpes, Grenoble, France, June 15, 2005

*“Modular Predictors for Robot Control and Activity Classification”*

at Neurobotics Meeting, Lucca, Italy, October 11, 2004

*“Chalk Talk: Natural Motion Capture and Behavior Extraction”*

at Computer Science Department, Brown University, Providence, RI, March 1, 2004

*“Multidimensional Scaling Approaches to Analyzing and Capturing of Human Motion”*

at Computer Science Colloquium, Harvey Mudd College, Claremont, CA, February 24, 2004

at Electrical Engineering and Computer Science Department, Oregon State University, Corvallis, OR, February 9, 2004

at Electrical Engineering and Computer Science Department, Vanderbilt University, Nashville, TN, February 2, 2004

at Computer Science Department, University of Nevada-Reno, November 14, 2003

at Computer Science Department, Brown University, Providence, RI, November 12, 2003

at Computer Vision Group, California Institute of Technology, Pasadena, CA, October 28, 2003

*“Deriving Vocabularies of Motion for Autonomous Humanoid Agents from Natural Human Performance”*

at Electrical Engineering and Computer Science Department, Vanderbilt University, Nashville, TN, May 1, 2003

*“Deriving Behavior Vocabularies (for Humanoid Control and Imitation) from Human Motion Capture”*

at Artificial Intelligence Group Seminar, University of California at San Diego, La Jolla, CA, December 2, 2002

at Mathematics and Computer Science Department, Alma College, Alma, MI, October 14, 2002

at Pattern Recognition and Image Processing Seminar, Michigan State University, Lansing, MI, October 11, 2002

at Computer Science Colloquium, Harvey Mudd College, Claremont, CA, September 19, 2002

*“Humanoid Control and Activity Modeling Projects at the USC Robotics Research Lab”*

at the Thirteenth Annual Government Technology Conference, Austin, TX, February 15, 2002

*“Primitives-Based Control and Learning by Imitation”*

at Computer Vision Group, California Institute of Technology, Pasadena, CA, January 26, 2001

*“Primitives-based Imitation: The Model, Implementation, and Automated Derivation”*

Imitation and Learning Seminar, University of Southern California, Los Angeles, CA, October 30, 2000

*“Imitation Using Primitives”*

Mobile Robotic Competition and Exhibition Workshop at the Seventeenth National Conference on Artificial Intelligence (AAAI 2000), Austin, TX, August 3, 2000

## Research Grants and Contracts

2016 NSF NRI IIS-1638060 “NRI: Collaborative Research: Sketching Geometry and

Physics Informed Inference for Mobile Robot Manipulation in Cluttered Scenes”  
 PI: O. Jenkins (collaborative with J. LaViola), total \$400K, Sept 2016 - Sept 2019.

### Completed Grants

- 2014      Brown University Research Seed Award “Robot Telepresence in Improved Nursing Home Organization,” PI: O. Jenkins, total \$80K, May 2014 - May 2015.
- Brown University Research Seed Award “Enabling Autonomous Flight of Drones in Complex, Unpredictable Environments,” PI: I. Bahar, total \$80K, May 2014 - May 2015.
- 2013      NASA EPSCoR “Web-Scale Assisted Robot Teleoperation,” PI: O. Jenkins, total \$750K, Sept 2013 - Sep. 2016.
- 2011      ONR SBIR “Natural Interaction with Unmanned Ground Vehicles,” PI: G. Taylor, Co-PI: O. Jenkins, \$120K, Oct. 2011 - Sep. 2013.
- 2010      Army SBIR Award A10A-030-0110 “LIBERATION: Leader Informed Beacon Estimation for ReAl-Time, Intelligent, Onboard Navigation,” PI: D. Kortenkamp, co-PI: O. Jenkins, total \$100K, Sep. 2010 - Mar. 2011.
- 2009      NSF CAREER Award IIS-0844486, “CAREER: Robot Learning from Multi-valued Demonstration,” PI: O. Jenkins, total \$558K, Jun. 2009 - Jul. 2014.
- AFOSR YIP Award, “Cover-To: Coordinating Robotic Networks through Belief Propagation,” PI: O. Jenkins, total \$300K, Jan. 2009 - Jan. 2012.
- Alfred P. Sloan Research Fellowship, PI: O. Jenkins, total \$50K, Apr. 2009 - Apr. 2012.
- 2008      ONR SBIR Phase II Award “Natural Human-Robot Interaction,” PI: C.V. Jones, co-PI: O.C. Jenkins, total \$750K, Oct. 2008 - Oct. 2010.
- ONR PECASE Award N000140810910 “Tracking Human Movement using Simulated Physics and Neurobiomechanics with Probabilistic Inference,” PI: O.C. Jenkins, total \$1,008K, Jun. 2008 - Sep. 2013.
- DARPA SBIR Phase II Award “Tactical Teams II: Cooperative Robot/Human Teams for Tactical Maneuvers,” PI: C.V. Jones, co-PI: O.C. Jenkins, total \$750K, Oct. 2008 - Oct. 2010.
- 2007      NSF Award CNS-0742156 “Collaborative Research: BPC-A: ARTSI: Advancing Robotics Technology for Societal Impact,” PI: O. Jenkins, total \$90K, Sep. 2007 - Nov. 2010.
- ONR Award N000140710141 “Learning Predictive Motion Vocabularies for Kinematic Tracking and Activity Recognition,” PI: O.C. Jenkins, total \$380K, Mar. 2007 - Mar. 2010.
- ONR SBIR Award “Natural Human-Robot Interaction,” PI: C.V. Jones, co-PI: O.C. Jenkins, total \$100K, Mar. 2007 - Sep. 2007.
- Brown Salomon Award “RobAuCon: Autonomous Control for Robots from Demonstration,” PIs: O. Jenkins and M. Sellmann, total \$30K, Jan 2006 - Jun 2007.
- DARPA SBIR Award “Tactical Teams: Cooperative Robot/Human Teams for

- Tactical Maneuvers,” PI: C.V. Jones, co-PI: O.C. Jenkins, total \$100K, Dec. 2006 - May 2007.
- 2006 ONR DURIP Award “Neural interfaces to enhance human motor performance: Instrumentation for modeling dexterous manipulation,” PI: M.J. Black, co-PIs: O.C. Jenkins and J.P. Donoghue, total \$315K, Apr. 2006 - Mar. 2008.
- 2005 NSF Award IIS-0534858 “Statistical Models of the Primate Neocortex: Implementation and Application,” PI: T. Dean, co-PIs: O. Jenkins and M. Black, total \$480K, Nov. 2005 - Nov. 2008.
- 2004 INRIA “Associate Team Grant: Video and Mesh Processing for 3D Cinematography,” PI: R. Ronfard, co-PIs: O. Jenkins, E. Boyer, R. Horaud, G. Taubin, \$20K, started Jan. 2005.

### Consulting

- 2011 NSF/WTEC International Assessment of Human-Robot Interaction R&D.
- 2007 DARPA Computer Science Futures Study Panel, Jan 2007 - Dec 2007.

## Professional Service

### University/Departmental Service

- 2017- Member, University of Michigan College of Engineering Dean’s Advisory Committee on Faculty of Color
- 2016- Member, University of Michigan Robotics Institute Executive Committee
- 2015- Chair, University of Michigan CSE Safety Committee
- 2015- Member, University of Michigan CSE Graduate Committee
- 2015- Member, University of Michigan Robotics Day Organizing Committee
- 2014-5 Auxiliary Member, Brown CS Development Committee
- 2014 Member, Brown University Rapid Planning Group on Entrepreneurship
- 2013-4 Member, Brown University Dean of the College Search Committee
- 2013-4 Member, Brown CS Vision Committee
- 2013 Member, Brown University Vice President of Research Search Committee
- 2012- Founder/Leader, Humanity-Centered Robotics Initiative at Brown University
- 2011- Member, Brown 250th Anniversary Steering Committee
- 2010-11 Chair, Brown University CS Public Relations Committee
- 2009-10 Member, Brown University CS Facilities Committee
- 2009-10 Chair/Member, Brown University CS Graduate Examination Committee
- 2007-8 Member, Brown University CS Graduate Admissions Committee
- 2006-8 Member, Brown University Faculty Executive Committee
- 2005-7 Member, Brown University CS Graphics Candidate Search Committee

2005-7	Member, Brown University CS Curriculum Committee
2004-6	Mentor, Brown University ALANA (African, Latino, Asian, and Native American) Mentoring Program
2004-5,7-8	Member, Brown University CS Doctoral Admissions Committee
2002-2003	Organizer, USC Computer Science Research Social Event Series
2002	Session Moderator, 5th Annual University of Southern California Graduate and Professional Student Senate Interdisciplinary Conference, April 12th, 2002.
1998-2002	Vice President for Finance/Communications Chair, USC Computer Science Graduate Organization,
1998-1999	USC Integrated Media Systems Center Student Council, Graduate Representative
1994-1996	Alma College ACM Chapter, President/Vice President

## Professional Service

### *Journal Editing*

2017-	Editor-in-Chief, ACM Transactions on Human-Robot Interaction (formerly Journal of Human-Robot Interaction)
2015	Guest Editor, Special Issue on “Natural User Interfaces for Adjustable Autonomy in Robot Control”, IEEE Computer Graphics and Applications
2008-2011	Associate Editor, International Journal of Social Robotics Guest Editor, Special Issue on “Robot Learning in Practice”, IEEE Robotics and Automation Magazine

### *Organizing Committees*

CRA URM	Member, Steering Committee, CRA Graduate Cohort Symposium for Under-represented Minorities in Computing
CAARMS 2017	Organizer, Conference for African-Americans in the Mathematical Sciences
AI+HRI 2014	Organizer, AAAI Fall Symposium on Artificial Intelligence and Human-Robot Interaction
HRI 2012	Program Chair, ACM/IEEE Human-Robot Interaction Conference
IROS 2011	Editor, IEEE Intelligent Robots and Systems Conference
AAAI-10 PGAI	Program Co-Chair, AAAI 2010 Track on Physically Grounded Artificial Intelligence
IJCAI 2009	Lead-Chair, IJCAI 2009 Robotics Exhibition and Challenges
AAAI Symposia	Co-Chair, AAAI Symposia Series
Robot Learning	Member, Steering Committee, IEEE Robotics and Automation Society Technical Committee on Robot Learning
AAAI 2008	Co-Chair, AAAI 2008 Mobile Robot Exhibition and Competition
ICDL 2008	Publications Chair, International Conference on Development and Learning

ICRA 2008	Principal Organizer, ICRA 2008 Workshop on Unifying Characteristics of Research in Human-Robot Interaction
AAAI 2007	Mobile Robot Workshop Chair, AAAI 2007
ICDL 2007	Special Session Organizer, International Conference on Development and Learning
Tapia 2007	Robotics Competition Co-Chair, Richard Tapia Celebration of Diversity in Computing Conference
R:SS 2006	Publicity Chair, Robotics:Science and Systems
R:SS 2005	Principal Organizer, Robotics:Science and Systems, Workshop on Modular Foundations for Control and Perception

*Program Committees*

IJCAI 2016	IJCAI Conference on Artificial Intelligence
AAAI 2016	AAAI Conference on Artificial Intelligence
HRI 2013	Human-Robot Interaction
HRIP 2013	Human-Robot Interaction Pioneers Workshop
IJCAI 2011	Senior Program Committee, International Joint Conference on Artificial Intelligence
HRI 2011	Human-Robot Interaction
AAMAS 2011	Senior Program Committee, Autonomous Agents and Multiagent Systems
ICRA 2011	Associate Editor, IEEE International Conference on Robotics and Automation
HRI 2010	Human-Robot Interaction
ICML 2010	International Conference on Machine Learning
RSS 2010	Robotics: Science and Systems
ICRA 2010	Associate Editor, IEEE International Conference on Robotics and Automation
ICDL 2009	International Conference on Development and Learning
IJCAI 2009	International Joint Conference on Artificial Intelligence
AAMAS 2009	Autonomous Agents and Multiagent Systems
ICAR 2009	International Conference on Advanced Robotics
HRI 2009	Human-Robot Interaction
RSS 2008	Robotics: Science and Systems
AAAI 2008	National Conference on Artificial Intelligence
AAAI 2008	National Conference on Artificial Intelligence, Physically Grounded AI Track
ICINCO 2008	International Conference on Informatics in Control, Automation, & Robotics
HRI 2008	International Conference on Human-Robot Interaction
ARM 2007	R:SS Workshop on Robot Manipulation: Sensing and Adapting to the Real World

ICDL 2007	International Conference on Development and Learning
IROS 2007	Associate Editor, IEEE Intelligent Robots and Systems
RO-MAN 2007	IEEE International Workshop on Robot and Human Interactive Communication
AAAI 2007	Conference on Artificial Intelligence
ICINCO 2007	International Conference on Informatics in Control, Automation, & Robotics
R:SS 2007	Robotics:Science and Systems
AAMAS 2007	Autonomous Agents and Multiagent Systems
IJCAI 2007	International Joint Conference on Artificial Intelligence
ICML 2006	International Conference on Machine Learning
AAAI 2006	National Conference on Artificial Intelligence
AAMAS 2006	Autonomous Agents and Multiagent Systems
ICRA 2006	IEEE International Conference on Robotics and Automation
PHI 2005	IEEE International Workshop on Modeling People and Human Interaction (PHI'05)
RO-MAN 2005	IEEE International Workshop on Robot and Human Interactive Communication
AAAI 2005	National Conference on Artificial Intelligence
ICAR 2005	International Conference on Advanced Robotics
ICRA 2005	IEEE International Conference on Robotics and Automation

***Tutorials***

HRI 2012	“ROS and Rosbridge: Roboticians out of the loop” International Conference on Human-Robot Interaction, Boston, MA, USA, March 5, 2012.
ARTSI 2009	“Regression 101” ARTSI (Advancing Robotics Technology for Societal Impact) Faculty Summer Workshop, Atlanta, GA, USA, June, 8, 2009
PSSCR 2007	“Robot Learning” at Player Summer School on Cognitive Robotics, Technical University of Munich, Munich, Germany, August 18, 2007
MASS 2003	“Embodied Robotic Agents” at Melbourne Agent Systems School, University of Melbourne, Melbourne, Australia, July 11, 2003

***Reviewing: Grants and Funding***

NSF	CISE: 2005, 2008, 2009, 2010, 2011, 2012, 2013, 2015
CRA/CCC	CI-Fellows: 2010

***Reviewing: Journals***

IEEE RAM	IEEE Robotics and Automation Magazine
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IJRR	International Journal of Robotics Research
AURO	Autonomous Robots
IJHR	International Journal of Humanoid Robotics
IEEE T-RO	IEEE Transactions on Robotics
IEEE SMC-A	IEEE Transactions on Systems, Man, and Cybernetics (Part A)
IEEE SMC-B	IEEE Transactions on Systems, Man, and Cybernetics (Part B)
ISR	Intelligent Service Robotics
IJSR	International Journal of Social Robotics
IS	Interaction Studies
NN	Neural Networks
ACM ToG	ACM Transactions on Graphics (and SIGGRAPH 2002,2004,2005,2008,2009; SIGGRAPH Asia 2008,)
Comput Graph	Computers & Graphics
IEEE TKDE	IEEE Transactions on Knowledge and Data Engineering
CVIU	Computer Vision and Image Understanding
IEEE TVCG	IEEE Transactions on Visualization and Computer Graphics
IEEE EMBS	IEEE Transactions on Biomedical Engineering
IEEE PAMI	IEEE Transactions on Pattern Analysis and Machine Intelligence
IJCV	International Journal of Computer Vision

***Reviewing: Conferences***

ICRA 2016	International Conference on Robotics and Automation
Humanoids 2015	IEEE-RAS International Conference on Humanoid Robotics
IROS 2015	IEEE Conference on Intelligent Robots and Systems
ICRA 2015	International Conference on Robotics and Automation
ICRA 2014	International Conference on Robotics and Automation
CVPR 2011	Computer Vision and Pattern Recognition
AAAI II 2010	AAAI 2010 Track on Integrated Intelligence
CVPR 2010	Computer Vision and Pattern Recognition
IROS 2010	IEEE Intelligent Robots and Systems
RO-MAN 2009	IEEE International Workshop on Robot and Human Interactive Communication
ICRA 2009	IEEE International Conference on Robotics and Automation
ICCV 2009	International Conference on Computer Vision
CVPR 2009	Computer Vision and Pattern Recognition
Tapia 2009	Tapia Celebration of Diversity in Computing 2009

IROS 2008	IEEE Intelligent Robots and Systems
CVPR 2008	Computer Vision and Pattern Recognition
ICRA 2008	IEEE International Conference on Robotics and Automation
IROS 2007	IEEE Intelligent Robots and Systems
Sandbox 2007	ACM SIGGRAPH Sandbox Symposium on Videogames
CVPR 2007	Computer Vision and Pattern Recognition
ICRA 2007	IEEE International Conference on Robotics and Automation
HRI 2007	Human-Robot Interaction
CVPR 2006	Computer Vision and Pattern Recognition
GI 2006	Graphics Interface
Humanoids 2004	IEEE-RAS International Conference on Humanoid Robotics
AAAI 2004	National Conference on Artificial Intelligence
GI 2004	Graphics Interface
ICDL 2002	International Conference on Development and Learning
IAS-6	International Conference on Intelligent Autonomous Systems
Humanoids 2000	IEEE International Conference on Humanoid Robotics

### **Community Service**

2006	Learning Through Interest Professional Panel, Met Center High School, Providence, RI, USA, June, 28, 2006
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### **Academic Honors, Fellowships, Honorary Societies**

2015	The Karen T. Romer Prize for Undergraduate Advising and Mentoring, Brown University
2013	National Geographic Emerging Explorer
2011	Popular Science “Brilliant 10”
2009	Sloan Research Fellowship, Alfred P. Sloan Foundation
2008	Young Investigator Award, Air Force Office of Scientific Research
2007	Presidential Early Career Award for Scientists and Engineers (PECASE)
2007	Recipient, Young Investigator funding, Office of Naval Research
2005	Honorable Mention, 2004 Freescale Wireless Design Challenge
2003	Upsilon Pi Epsilon, Computer Science Honorary Society
2003	Autonomous Agents and Multi-Agent Systems Conference Travel Award
2003	University of Southern California Graduate Student Leadership Award
2002	University of Southern California Office of International Services Outstanding Leadership Award

2000	AAAI Student Exhibitor Travel Scholarship
2000	Autonomous Agents Conference Travel Award
1998-2001	Univ. of Southern California All-University Predoctoral Fellowship Recipient
1996-1997	Georgia Tech College of Computing GTE Fellowship Recipient
1996	Alma College Senior Leadership Award
1995	Omicron Delta Kappa, Academic Honorary Society
1993-1995	Alma College Dean's List

## Teaching and Advising

### 5 courses taught at the University of Michigan

2017	EECS 467 Autonomous Robotics Laboratory <ul style="list-style-type: none"> <li>Fall 2015 Enrollment: 40</li> </ul>
2016	ROB 550 Robotic Systems Laboratory <ul style="list-style-type: none"> <li>Fall 2015 Enrollment: 48</li> </ul> EECS 398-002 (Introduction to Autonomous Robotics) also as graduate offering EECS 598-010 (Robot Modeling and Control) <ul style="list-style-type: none"> <li>Winter 2016 Enrollment: 43</li> <li>Fall 2016 Enrollment: 50</li> </ul>
2015	EECS 598-010 (Interactive Robot Manipulators Seminar) <ul style="list-style-type: none"> <li>Fall 2015 Enrollment: 4</li> </ul>

### 6 courses taught at Brown University

2004-15	CS 148 (Building Intelligent Robots) <ul style="list-style-type: none"> <li>Spring 2015 Enrollment: 59</li> <li>Spring 2014 Enrollment: 30</li> <li>Fall 2011 Enrollment: 12</li> <li>Fall 2010 Enrollment: 44</li> <li>Fall 2009 Enrollment: 13</li> <li>Spring 2009 Enrollment: 28</li> <li>Fall 2007 Enrollment: 17</li> <li>Fall 2006 Enrollment: 16</li> <li>Fall 2005 Enrollment: 19</li> <li>Fall 2004 Enrollment: 21</li> </ul>
2013-14	CS 195E (Human-Robot Interaction Seminar)

- Fall 2014 Enrollment: 4
  - Fall 2013 Enrollment: 8
- 2011-12 CS 2951-A (Robots for Education)
- Spring 2011 Enrollment: 9
  - Spring 2012 Enrollment: 9
- 2011-12 CS 195-N (Game Development Seminar)
- Spring 2011 Enrollment (Android and Core Techniques): 18
  - Fall 2011 Enrollment (Android and Core Techniques): 12
  - Spring 2012 Enrollment (3D Game Engines): 12
- 2007-10 CS 296-3/295-Z (Robot Learning and Autonomy)
- Spring 2007 Enrollment: 10
  - Spring 2010 Enrollment: 10
- 2006-8 CS 134 (Innovating Game Development)
- Spring 2006 Enrollment: 22
  - Spring 2008 Enrollment: 20

**Postdoctoral supervising**

- 2016- Dr. Troy McMahon
- 2009-12 Dr. Christopher Crick
- 2009-11 Dr. Sarah Osentoski
- 2009-10 Dr. Trevor Jay

**Doctoral advising**

- 2017- Zheming Zhou
- 2016- Kevin French
- 2016- Zhefan Ye
- 2016- Zhen Zeng
- 2013- Karthik Desingh
- 2013- Zhiqiang Sui
- 2009-15 Mark Buller, dissertation: “Human Thermal-Work Strain Performance Optimization from Wearable Physiological Sensors”
- 2008-13 Marek Vondrak, dissertation: “Physically Plausible Human Pose and Control Estimation from Video”
- 2004-9 Daniel Grollman, dissertation: “Teaching old dogs new tricks: Incremental multimap regression for interactive robot learning from demonstration”

**Masters research advising**

2016-17	Zheming Zhou
2016-17	Jiatao Fan
2014-15	Carl Olsson
2013-15	Lingzhu Xiang, project: “Mapping and Control with Telepresence Robots”
2011-12	Jihoon Lee, project: “Web Applications for Robots using rosbridge”
2009-10	Barbara Korel, project: “Teaching Autonomous Robotics using Player and ROS”
2009	Aysun Bascetincelik
2008-9	Glenn Donovan (Brown Engineering)
2008	Mark Buller
2008	Sanghoon Cha, project: “RCHeli: Infrastructure for PC-Controlled Micro Helicopter”
2008	Ahmad Wilson
2008	Neehar Cherabuddi
2007-8	Jesse Butterfield, project: “Multi-robot Markov Random Fields”
2009-8	Korhan Bircan
2006-7	Jonas Schwertfeger, project: “Multi-Robot Belief Propagation for Distributed Robot Allocation”
2005-6	Brendan Dickinson, project: “Roomba Pac-Man: Teaching Autonomous Robotics through Embodied Gaming”
2005-6	Mark Moseley, project: “Technical Aspects of Roomba Pac-Man”
2005-6	Suamporn Ketpreechasawat, project: “Hierarchical Landmark Charting”
2004-6	Ethan Leland, project: “The Brown University Robocup 2006 Four-legged League Team Report”
2005-6	Pawel Wrotek, project: “Dynamo: Dynamic, Data-driven Character Control with Adjustable Balance”
2004-6	Matthew Loper
2006	Jason Mallios
2005	Salil Apte, project: “Time-Varying Azimuth Discrimination and Resynthesis: A New Method for Music Repurposing”.

### **Visiting Graduate Student Supervision**

2006-7	Marek Vondrak
2005-6	Germán González (KTH), Masters thesis: “Kinematic Tracking and Activity Recognition Using Motion Primitives” <ul style="list-style-type: none"> <li>• Best AI Masters Thesis of 2005, Swedish Artificial Intelligence Society</li> </ul>

### **Sc.B. Research/Thesis Advising**

2013-15	Matt Wong
2010-11	Pete White
2009-11	Joshua Kaplan
2009-11	Matt Wilde
2009-10	Lyla Fujiwara
2009-10	Paul Meier
2007-9	Micah Lapping-Carr, honors thesis: “RGame: A Video Game for Interactive Robot Learning”
2007-8	Daniel Byers
2008	Jesse Errico
2006-7	Theadora Hinkle
2007	Stephanie Greer
2006	Alexander Rice
2006	Graham Rosser
2006	David Bloom, Brown UTRA Award
2005	Edwin Chang, honors thesis: “Sketching Articulation and Pose for Facial Meshes”.
2005	Gabriel Taubman, honors thesis: “MusicHand: A Handwritten Music Recognition System”.
2005	Daniel Hartmann

**Ph.D. Dissertation Committee Member**

12/2016	Justin Storms
12/2014	Russell Toris (WPI)
1/2014	Seungsu Kim (EPFL)
7/2012	Wenjin Zhou
7/2011	Nik Melchior (Carnegie Mellon)
2/2011	Jan Bandouch (TU-Munich)
3/2010	Jon Cohen
4/2008	Casey Marks
12/2007	Lijuan Cai
4/2006	Christina N. de Juan (Vanderbilt)

**Additional Information**

**Selected Media Coverage**

2014	“I, Robot”, in <i>2013 Brown University Annual Presidential Report</i>
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- “Robotics Professor Wows Republicans at Retreat”, in *AAAS Science Insider*, January 31, 2014
- 2011 “Crowdsourced online learning gives robots human skills”, in *New Scientist*, July 26, 2011
- 2009 “Robots Get Their Own Operating System”, in *New Scientist*, Aug 10, 2009
- “Wag the Robot: Robot Responds To Human Gestures”, in *ScienceDaily*, March 12, 2009.
- 2006 “Let’s Make a Game”, by Lawrence Goodman, in *Brown Alumni Magazine*, July/August 2006.
- “Science as a sport”, by Bryan Rourke, in *The Providence Journal*, June 8, 2006.
- “Robopups do not lie down”, by Maggie O’Brien, NBC Evening News (Providence Channel 10), aired May 9, 2006.
- 2003 “The Many Faces of Behavior”, by Torbjorn Dahl, in *European Research Consortium for Informatics and Mathematics News*, Number 53, April 2003.
- 2001 ABC Evening News (Los Angeles Channel 7), by Miriam Hernandez, featured videos of humanoid robot imitating human motion, aired June 27, 2001.

### Production Credits

- 1998 Animator/Modeler, *An Alien Occurrence*, produced by the Georgia Tech Animation Lab.

### Personal

Citizenship	United States of America
Gender	Male
Ethnicity	Black/African-American
Family	Married, 3 children

Ann Arbor, MI, USA