

# Odest Chadwicke Jenkins

Curriculum Vitae

November 5, 2009

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## 1. Name/Title

Name Odest Chadwicke Jenkins  
Position Assistant Professor  
Department Computer Science

## 2. Contact Information

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## 3. 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.

## 4. Professional Appointments

7/2004- *Assistant Professor*, Computer Science Department, Brown University, Providence, RI.  
10/2003-6/2004 *Postdoctoral Researcher*, Robotics Research Lab, Computer Science Department, University of Southern California, Los Angeles, CA. Supervisor: M. Matarić.  
8/1998-10/2003 *Graduate Research Assistant*, Computer Science Department, University of Southern California, Los Angeles, CA. Supervisor: M. Matarić.  
8/1997-6/1998 *Graduate Teaching Assistant*, College of Computing, Georgia Institute of Technology, Atlanta, GA. Supervisor: P. Enslow.  
6/1997-8/1997 *CAD Engineer/Intern*, Intel Corporation, Folsom, CA. Supervisor: J. Kasak.  
8/1996-6/1997 *Graduate Research Assistant*, Electronic Systems Lab, Georgia Tech Research Institute, Georgia Institute of Technology, Atlanta, GA. Supervisor: F. Wright.

- 5/1995-8/1995 *Systems Intern*, Ford Systems Integration Center, Ford Motor Company, Allen Park, MI. Supervisor: D. Lenardon.
- 5/1994-8/1994 *Undergraduate Research Intern*, PRISM Lab, Computer Science Engineering, University of Texas at Arlington, Arlington, TX. Supervisor: K. Harbison.
- 8/1993-5/1996 *Resident Assistant*, Office of Student Affairs, Alma College, Alma, MI. Supervisor: J. Kridler.

## 5. Publications

### Books

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

### Chapters in Books

- 2009 D. H. Grollman and O. C. Jenkins. *From Motor to Interaction Learning in Robots*, chapter Can We Learn Finite State Machine Robot Controllers from Interactive Demonstration?, page in press. 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. 2007.

### Refereed Journal Articles

- 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.

### Magazine Articles

- 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.

### Patents

- C. V. Jones, O. C. Jenkins, M. M. Loper, *System and Method for Cooperative Remote Vehicle Behavior*, U.S. Patent Pending 20080253613

### Refereed Conference Papers

- 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

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**

- 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 Reports

- 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 Tech-

- nical 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.

### Invited K-12 Talks

*“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

### Invited Talks

*“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, 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

## 6. Research Grants and Contracts

### Current Grants

- 2009 NSF CAREER Award IIS-0844486, “CAREER: Robot Learning from Multi-valued Demonstration”, PI: O. Jenkins, total \$558K, Jun. 2009 - Jul. 2014
- 2008 AFOSR YIP Award, “Cover-To: Coordinating Robotic Networks through Belief Propagation”, PI: O. Jenkins, total \$300K, Jan. 2009 - Jan. 2012
- ONR SBIR “Natural Human-Robot Interaction”, PI: C.V. Jones, co-PI: O.C. Jenkins, total \$750K, Oct. 2008 - Oct. 2010
- DARPA SBIR 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
- 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
- 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

### Completed Grants

- 2007 ONR SBIR “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

- 2007 DARPA Computer Science Futures Study Panel, Jan 2007 - Dec 2007.

## 7. Service

### University/Departmental Service

- 2009- Member, Brown University CS Facilities Committee
- 2009- 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*

- Associate Editor, International Journal of Social Robotics
- Guest Editor, Special Issue on “Robot Learning in Practice”, IEEE Robotics and Automation Magazine

*Organizing Committees*

- Kavli FOS Organizing Committee, 2010 German-American Kavli Frontiers of Science
- 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*

- AAAI-10 PGAI    Program Co-Chair, AAAI 2010 Track on Physically Grounded Artificial Intelligence
- 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***

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***

NSF CISE: 2005, 2008, 2009

***Reviewing: Journals***

IEEE RAM IEEE Robotics and Automation Magazine

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; 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***

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ICRA 2009	IEEE International Conference on Robotics and Automation
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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## 8. Academic Honors, Fellowships, Honorary Societies

2009	Sloan Research Fellowship, Alfred P. Sloan Foundation
2009	Kavli Fellow, National Academy of Sciences
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

## 9. Teaching and Advising

### 3 courses taught at Brown University

- 2004- CS 148 (Building Intelligent Robots): This course covers methods and algorithms for the autonomous control of robotic agents. Course topics include robotics philosophy, engineering robotics, basic control theory, autonomous control architectures, robot localization, and robot localization. Projects include implementation of a reactive subsumption control architecture, probabilistic robot localization, path planning, and robot learning from demonstration. Students implement assignments and projects using Player/Stage/Gazebo robot middleware and simulation platform and the iRobot Create mobile robot base.
- Fall 2004 Enrollment: 21
  - Fall 2005 Enrollment: 19
  - Fall 2006 Enrollment: 16
  - Fall 2007 Enrollment: 17
  - Spring 2009 Enrollment: 28
- 2006- CS 134 (Innovating Game Development): A games research course focusing on current trends in game development and innovative technologies that will likely shape the future of the game industry. Students work alone or in groups to design and develop a fully functional video game based around some novel technological paradigm of their choice. Student groups begin this process by creating a project proposals and selling their idea to the course staff. Once their idea is approved, student teams combine their inspiration, creativity, technical knowledge, and software engineering to prepare their project for “release” (demonstrations during our Arcade Day).
- Spring 2006 Enrollment: 22
  - Spring 2008 Enrollment: 20
- 2007 CS 296-3 (Robot Learning and Autonomy): This course attempts to address the question “What are the driving applications of robotics?” How will robots move out of structured laboratory settings into real-world applications where a diversity of users, environments, and tasks abound. Towards this end, CS296-3 is a seminar course that covers current research topics related to perceiving and acting in the real world. These topics will be pursued through independent

reading, class discussion, and project implementations. Papers covered will be drawn from robotics, computer vision, animation, machine learning, and neuroscience. Special emphasis will be given to developing autonomous control from human demonstration and video game style interfaces.

- Spring 2007 Enrollment: 10

### Ph.D. advisor/supervision to 5 students

#### *Graduated*

2009 Daniel Grollman, dissertation: “Teaching old dogs new tricks: Incremental multimap regression for interactive robot learning from demonstration”

#### *Current*

2005- Aggeliki Tsoli  
 2008- Jesse Butterfield  
 2008- Marek Vondrak  
 2009- Mark Buller

### Sc.M. research advisor to 18 students

#### *Graduated*

2009 Aysun Bascetincelik  
 2009 Glenn Donovan (Brown Engineering)  
 2008 Mark Buller  
 2008 Sanghoon Cha, “RCHeli: Infrastructure for PC-Controlled Micro Helicopter”  
 2008 Ahmad Wilson  
 2008 Neehar Cherabuddi  
 2008 Jesse Butterfield, project “Multi-robot Markov Random Fields”  
 2008 Korhan Bircan  
 2007 Jonas Schwertfeger, project: “Multi-Robot Belief Propagation for Distributed Robot Allocation”  
 2006 Brendan Dickinson, project: “Roomba Pac-Man: Teaching Autonomous Robotics through Embodied Gaming”  
 2006 Mark Moseley, project: “Technical Aspects of Roomba Pac-Man”  
 2006 Suamporn Ketpreechasawat, project: “Hierarchical Landmark Charting”  
 2006 Ethan Leland, project: “The Brown University Robocup 2006 Four-legged League Team Report”  
 2006 Pawel Wrotek, project: “Dynamo: Dynamic, Data-driven Character Control with Adjustable Balance”  
 2006 Matthew Loper  
 2006 Jason Mallios

2005 Salil Apte, project: “Time-Varying Azimuth Discrimination and Resynthesis: A New Method for Music Repurposing”.

*Current*

2009- Barbara Korel

**Sc.B. research/thesis advisor to 11 students**

*Graduated*

2007-9 Micah Lapping-Carr, honors thesis: “RGame: A Video Game for Interactive Robot Learning”  
 2007-8 Daniel Byers  
 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

*Current*

2008- Jesse Errico

**Visiting student supervision of 2 students**

2006-7 Marek Vondrak  
 2005-6 Germán González (KTH), Masters thesis: “Kinematic Tracking and Activity Recognition Using Motion Primitives”  
 • Best AI Masters Thesis of 2005, Swedish Artificial Intelligence Society

**Ph.D. Dissertation Committee Member to 3 students**

4/2008 Casey Marks  
 12/2007 Lijuan Cai  
 4/2006 Christina N. de Juan (Vanderbilt)

**Ph.D. Thesis Proposal Committee Member to 6 students**

12/2008 Nik Melchior (Carnegie Mellon)  
 10/2007 Casey Marks  
 6/2007 John Raiti (Brown Engineering)  
 8/2007 Christina Campbell (Vanderbilt)  
 4/2007 Lijuan Cai

5/2005 Christina N. de Juan (Vanderbilt)

**Ph.D. Research Exam Committee Member to 8 students**

5/2009 Yuri Malitsky

4/2008 Mykhaylo Kostandov

4/2008 Wenjin Zhou

3/2008 Jadrian Miles

3/2008 Anna Ritz

12/2006 Micha Elsner

10/2005 Jon Cohen (Brown, Cognitive Science)

10/2005 Adrian Nestor (Brown, Cognitive Science)

3/2005 Jenine Turner

**Sc.B. honors committee member for 1 student**

2008 Daniel Winograd-Cort

2005 Edward C. Kern

## 10. Additional Information

### Selected Media Coverage

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.

## 11. Personal

Citizenship United States of America

Gender            Male  
Ethnicity        Black/African-American  
Family           Married, 2 children

Providence, RI, USA