

Reviewed/Refereed Publications

- 2010 “**Cloud Computing on Rich Data**,” Michael Kozuch, Jason Campbell, Padmanabhan Pillai, and Madeleine Glick, in *Intel Technology Journal*, 14(1), December 2010.
- “**Anatomy-Based Organization of Morphology and Control in Modular Self-Reconfigurable Robots**,” David J Christensen, Jason Campbell, Kasper Støy, in *Neural Computing and Applications* special issue on Swarm Robotics, 19(6), June 2010
- 2009 “**A Tale of Two Planners: Modular Robotic Planning with LDP**,” Michael De Rosa, Babu Pillai, Jason Campbell, Seth Goldstein, and Peter Lee, in *IEEE International Conference on Intelligent Robots and Systems (IROS 2009)*, October 2009.
- “**Distributed Localization of Modular Robot Ensembles**,” Stanislav Funiak, Babu Pillai, Michael Ashley-Rollman, Jason Campbell, Seth Goldstein, in the *International Journal of Robotics Research*, 28(8), August 2009.
- “**A Language for Large Ensembles of Independently Executing Nodes**,” Michael Ashley-Rollman, Babu Pillai, Jason Campbell, Seth Goldstein, and Peter Lee, in the *International Conference on Logic Programming (ICLP 2009)*, July 2009.
- “**Beyond Audio and Video: Using Claytronics to Enable Pario**,” Seth Copen Goldstein, Todd C. Mowry, Jason D. Campbell, Michael P. Ashley-Rollman, Michael De Rosa, Stanislav Funiak, James F. Hoberg, Mustafa Emre Karagozler, Brian Kirby, Peter Lee, Padmanabhan Pillai, J. Robert Reid, Daniel D. Stancil, and Michael Philetus Weller, in *AI Magazine*, 30(2), July, 2009.
- 2008 “**Collective Actuation**,” Jason Campbell, Padmanabhan Pillai, in the *International Journal of Robotics Research*, special issue on Self-Reconfigurable Modular Robots [**invited submission**]
- “**Distributed Watchpoints: Debugging Large Multi-Robot Systems**,” Michael De Rosa, Seth Copen Goldstein, Peter Lee, Jason Campbell, Padmanabhan Pillai, Todd C. Mowry, in the *International Journal of Robotics Research*, special issue on Self-Reconfigurable Modular Robots [**invited submission**]
- “**Video Monitoring of Honey Bee Colonies at the Hive Entrance**,” Jason Campbell, Lily Mummert, Rahul Sukthankar, in the *ICPR Workshop on Visual Observation and Analysis of Animal and Insect Behavior*, December 2008.
- “**From Roles to Anatomy to Scalable Modular Self-Reconfigurable Robots**,” David Johan Christensen, Jason Campbell, in *IEEE International Conference on Robotics and Automation (ICRA 2008)*
- “**Programming Modular Robots with Locally Distributed Predicates**,” Michael De Rosa, Padmanabhan Pillai, Jason Campbell, Seth Copen Goldstein, Peter Lee, in *IEEE International Conference on Robotics and Automation (ICRA 2008)*
- “**Distributed Localization of Modular Robot Ensembles**,” Stanislav Funiak, Babu Pillai, Michael Ashley-Rollman, Jason Campbell, Seth Goldstein, in *Robotics Science and Systems (RSS 2008)*.
- “**Generalizing metamodules to simplify planning in modular robotic systems**,” Daniel Dewey, Siddhartha Srinivasa, Michael Ashley-Rollman, Michael De Rosa, Padmanabhan Pillai, Todd Mowry, Jason Campbell, Seth Goldstein, in *IEEE International Conference on Intelligent Robots and Systems (IROS 2008)*

- 2007 **“Declarative Programming for Modular Robots,”** Michael P. Ashley-Rollman, Michael De Rosa, Siddhartha S. Srinivasa, Padmanabhan Pillai, Seth Copen Goldstein, and Jason D. Campbell, in *Workshop on Self-Reconfigurable Robots/Systems and Applications* at IROS 2007.
- “Internal Localization of Modular Robot Ensembles,”** Stanislav Funiak, Padmanabhan Pillai, Jason D. Campbell, and Seth Copen Goldstein, in *Workshop on Self-Reconfigurable Robots/Systems and Applications* at IROS 2007.
- “Movement Primitives for an Orthogonal Prismatic Closed-Lattice-Constrained Self-Reconfiguring Module,”** Michael Philetus Weller, Mustafa Emre Karagozler, Brian Kirby, Jason Campbell and Seth Copen Goldstein, in *Workshop on Self-Reconfigurable Robots/Systems and Applications* at IROS 2007.
- “Electrostatic Latching for Inter-module Adhesion, Power Transfer, and Communication in Modular Robots,”** Mustafa Emre Karagozler, Jason D. Campbell, Gary K. Fedder, Seth Copen Goldstein, Michael Philetus Weller, and Byung W. Yoon, in *IEEE International Conference on Intelligent Robots and Systems (IROS 2007)*
- “A Modular Robotic System Using Magnetic Force Effectors,”** Brian Kirby, Burak Aksak, James Hoburg, Todd Mowry, Padmanabhan Pillai, Seth Copen Goldstein, Jason Campbell, in *IEEE International Conference on Intelligent Robots and Systems (IROS 2007)*
- “Distributed Watchpoints: Debugging Large Multi-Robot Systems,”** Michael De Rosa, Seth Copen Goldstein, Peter Lee, Jason Campbell, Padmanabhan Pillai, in *IEEE International Conference on Robotics and Automation (ICRA 2007)*
- “Integrated Debugging of Large Modular Robot Ensembles,”** Benjamin Rister, Jason Campbell, Padmanabhan Pillai, Todd Mowry, in *IEEE International Conference on Robotics and Automation (ICRA 2007)*
- “Scale Effects on Locomotion of Catom Chains,”** David Johan Christensen, Jason Campbell, in *IEEE International Conference on Robotics and Automation (ICRA 2007)*
- 2006 **“A 3D Fax Machine Based on Claytronics,”** Padmanabhan Pillai, Jason Campbell, Gautam Kedia, Shishir Moudgal, Kaushik Sheth, in *IEEE International Conference on Intelligent Robots and Systems (IROS 2006)*
- “Scalable Shape Sculpting Via Hole Motion: Motion Planning in Lattice-Constrained Modular Robots,”** Michael De Rosa, Seth Copen Goldstein, Peter Lee, Jason Campbell, Padmanabhan Pillai, in *IEEE International Conference on Robotics and Automation (ICRA 2006)* [best student paper nominee]
- 2005 **“The Robot is the Tether – Active, Adaptive Power Routing for Modular Robots with Unary Inter-robot Connectors,”** Jason Campbell, Padmanabhan Pillai, Seth Copen Goldstein, in *IEEE International Conference on Intelligent Robots and Systems (IROS 2005)*
- “A Robust Visual Odometry and Precipice Detection System Using Consumer-grade Monocular Vision,”** Jason Campbell, Rahul Sukthankar, Illah Nourbakhsh, Aroon Pahwa, in *IEEE International Conference on Robotics and Automation (ICRA 2005)*
- “Leveraging Limited Autonomous Mobility to Frame Attractive Group Photos,”** Jason Campbell, Padmanabhan Pillai, in *IEEE International Conference on Robotics and Automation (ICRA 2005)*

“Exploring Programmable Matter”, Seth Copen Goldstein, Jason Campbell, Todd C. Mowry, in *IEEE Computer*, June 2005 [**invited article**]

“IrisNet – An Internet-Scale Architecture for Multimedia Sensors,” Jason Campbell, Phillip B. Gibbons, Suman Nath, Padmanabhan Pillai, Srinu Seshan and Rahul Sukthankar, in *ACM Multimedia (MM 2005)* [**invited submission**]

2004 **“Multi-fidelity Storage”**, Padmanabhan Pillai, Yan Ke, Jason Campbell, in *ACM 2004 International Workshop on Video Surveillance and Sensor Networks*

“Forensic Video Reconstruction”, Larry Huston, Rahul Sukthankar, Jason Campbell, Padmanabhan Pillai, in *ACM 2004 International Workshop on Video Surveillance and Sensor Networks*

“Techniques for Evaluating Optical Flow for Visual Odometry in Extreme Terrain”, Jason Campbell, Rahul Sukthankar, Illah Nourbakhsh, in *IEEE International Conference on Intelligent Robots and Systems (IROS 2004)*

Unrefereed Publications, Proposals, and Reports

- 2008 “Claytronics: Mesoscale Programmable Matter,” Seth Copen Goldstein, Jason Campbell, J. Robert Reid, proposal to DARPA Programmable Matter program
- 2007 “A Soft, Flexible, Mobile Robot from a Large Ensemble of Microbots,” Seth Copen Goldstein, Jason Campbell, J. Robert Reid, **invited full proposal** to DARPA ChemBots program
- 2006 “Programmable Matter and Ensemble Programming,” Jason Campbell, Seth Copen Goldstein, Todd C. Mowry, position paper presented at the NSF Workshop to Establish a Cyber-Physical Systems Program
- “Sensing and Reproducing the Shapes of 3D Objects Using Claytronics,” Padmanabhan Pillai, Jason Campbell, in *ACM Sensys 2006 Demo Abstracts*
- “Collective Actuation”, Jason Campbell, Padmanabhan Pillai, in *Workshop on Self-Reconfigurable Modular Robots at Robotics Science and Systems 2006*
- “Distributed Watchpoints: Debugging Very Large Ensembles of Robots”, Michael De Rosa, Seth Copen Goldstein, Peter Lee, Jason Campbell, Padmanabhan Pillai, in *Workshop on Self-Reconfigurable Modular Robots at Robotics Science and Systems 2006*
- 2005 “Claytronics: Highly Scalable Communications, Sensing, and Actuation Networks”, B. Aksak, P. S. Bhat, J. Campbell, M. DeRosa, S. Funiak, P. B. Gibbons, S. C. Goldstein, C. Guestrin, A. Gupta, C. Helfrich, J. Hoburg, B. Kirby, J. Kuffner, P. Lee, T. C. Mowry, P. S. Pillai, R. Ravichandran, B. D. Rister, S. Seshan, M. Sitti and H. Yu, in *ACM SenSys 2005 Demo Abstracts*
- “Catoms — Moving Robots Without Moving Parts”, Brian Kirby, Jason Campbell, Burak Aksak, Padmanabhan Pillai, James Hoburg, Todd Mowry, Seth Copen Goldstein, in *2005 Conference of the American Association for Artificial Intelligence, Robotics Exhibition Abstracts*
- “Dynamic Simulation and High Speed, All-Terrain Robot Navigation”, Kevin Peterson, Tom Howard, Red Whittaker, Jason Campbell, Rahul Sukthankar, proposal to Intel Research Council
- 2004 “Combined Localization and Communications Networks for Planetary Exploration”, Matthew Deans, Jason Campbell, Paolo Pirjanian, Maynard Holliday, David Miller, **invited full proposal** to NASA “Code T” BAA.
- “Visual Odometry Using Commodity Optical Flow”, Jason Campbell, Aroon Pahwa, Rahul Sukthankar, and Illah Nourbakhsh, in *2004 Conference of the American Association for Artificial Intelligence, Intelligent Systems Demo Abstracts*