

NATHAN SCHURR

PHE 514, University of Southern California, Los Angeles, CA, 90089

(213) 740-9560; schurr@usc.edu

Education

- **University of Southern California**—Los Angeles, CA - in progress
Ph.D. in Computer Science
 - Advisor: Professor Milind Tambe
 - Thesis: Towards Human-Multiagent Teams
 - Expected Graduation Date: July, 2007
- **University of Southern California**—Los Angeles, CA - 2004
M.S. in Computer Science
 - Advisor: Professor Milind Tambe
- **California Polytechnic State University**—San Luis Obispo, CA - 2002
B.S. in Computer Engineering
 - Minor: Philosophy
 - Honor: Cum Laude

Research Interests

Artificial Intelligence, Multiagent Systems, Human-Multiagent Teams, Human Multirobot Teams, Adjustable Autonomy, Decision Theory, Beliefs Desires Intentions.

Research Funding Granted

Multiagent Adjustable Autonomy Framework (MAAF) to Support Multi-robot, Multi-Human Teams. Specialized Robot/Human Teams for Limited Tactical Maneuvers. Subcontract from Perceptronics Solutions. DARPA SBIR SB062-009. Funding - \$30,000 (Phase 1: Feb 1 , 2007 to June 30 2007)

Technology for Enhanced Command and Control of Small Robotics Assets. Consultant. DARPA SBIR OSD06-UM4. Funding - \$5,000 (Phase 1: May 1 , 2007)

Experience

- **Research Assistant and Founding Member**—Los Angeles, CA - 2004 to present
Center for Risk and Economic Analysis of Terrorism Events (CREATE)
 - Helped secure funding for the first University Center of Excellence funded by the U.S. Department of Homeland Security
 - Lead the emergency response research project and coordinated with the Los Angeles Fire Department
 - Developed tools to simulate large-scale urban disaster response and train incident commanders

- **Research Assistant**—Los Angeles, CA - 2002 to present
Teamcore Research Group, USC
 - Robot, Agents and People (RAP) Project
 - Software for Distributed Robotics (SDR) Project
 - Cognitive Agent that Learns and Organizes (CALO) Project
 - Demonstrating Effective and Flexible Coordination of Teams via Omnipresence (DEFACTO) Project
 - Multiagent Adjustable Autonomy Framework (MAAF) to Support Multi-robot, Multi-Human Teams
- **Teaching Assistant**—Los Angeles, CA - 2003
Computer Science Department, USC
 - CSCI 543 Software Multiagent Systems
- **Manager of developers on Omni-Viewer Interface**—Los Angeles, CA - 2004 to present
CREATE Center, USC
 - Built on top of the Ogre 3D engine and incorporates multiple perspectives
 - Connects with the Robocup Rescue simulation and Machinetta teamwork proxies to facilitate seamless human-multiagent interaction
- **Manager of video game designers to develop FireScope**—Los Angeles, CA - 2006 to present
CREATE Center, USC
 - Worked with a group of students to create a “serious game” based on incident commander scenario
- **Manager of four software developers**—Los Angeles, CA - 2005
Teamcore Research Group, USC
 - All worked on adding functionality and documentation to the Machinetta proxy-based teamwork software package
- **Senior Software Engineer/Co-founder**—San Luis Obispo, CA - 2000 to 2001
Terazima LLC
 - Developed applications for enterprise peer to peer networking
 - Completed design and Java coding for the Gnutella module
 - Influenced business decisions and direction of company
- **Co-Program Manager and Design Lead**—San Luis Obispo, CA - 2000
Collaborative Agent Design Research Center, Cal Poly SLO
 - Developed 3D interactive graphics demo to monitor and assist in the loading of cargo onto ships
- **Summer Intern**—Hillsboro, Oregon. 1999
Intel Corporation
 - Owned the State Equations for WXB Bridge to the 82460GX chipset

Conference Papers and Journal Articles

Nathan Schurr, Pratik Patil, Fred Pighin, Milind Tambe **Using Multiagent Teams to Improve the Training of Incident Commanders** *Proceedings in the Industry Track of the Fifth International Joint Conference on Autonomous Agents and Multiagent Systems* 2006

Nathan Schurr, Janusz Marecki, Paul Scerri, J. P. Lewis, Milind Tambe **The DEFACTO System: Training Tool for Incident Commanders** *The Seventeenth Innovative Applications of Artificial Intelligence Conference (IAAI)* 2005

Nathan Schurr, Janusz Marecki, Nikhil Kasinadhuni, Milind Tambe, J.P. Lewis, Paul Scerri **The DEFACTO System for Human Omnipresence to Coordinate Agent Teams: The Future of Disaster Response** *Poster in Proceedings of the Fourth International Joint Conference on Autonomous Agents and Multiagent Systems* 2005

Nathan Schurr, Janusz Marecki, Milind Tambe, Paul Scerri **Towards Flexible Coordination of Human-Agent Teams** *Multiagent and Grid Systems - An International Journal* 2005

M. Tambe, E. Bowring, H. Jung, G. Kaminka, R. Maheswaran, J. Marecki, P. J. Modi, R. Nair, J. Pearce, P. Paruchuri, D. Pynadath, P. Scerri, N. Schurr, P. Varakantam **Conflicts in Teamwork: Hybrids to the Rescue** *In Proceedings of the Fourth International Joint Conference on Autonomous Agents and Multiagent Systems (AAMAS)* 2005

Paul Scerri, David V. Pynadath, Lewis Johnson, Paul Rosenbloom, Nathan Schurr, Milind Tambe **A Prototype Infrastructure for Distributed Robot-Agent-Person Teams** *Proceedings of The Second International Joint Conference on Autonomous Agents and Multiagent Systems (AAMAS)* 2003

Book Chapters

Janusz Marecki, Nathan Schurr, Milind Tambe, Paul Scerri **Dangers in Multiagent Rescue using DEFACTO** *Lecture Notes in Computer Science, Springer Academic Press* 2007

Nathan Schurr, Janusz Marecki, Paul Scerri, J. P. Lewis, Milind Tambe **The DEFACTO System: Coordinating Human-Agent Teams for the Future of Disaster Response** *Programming Multiagent Systems. Springer Press Book Chapter* 2005

Janusz Marecki, Nathan Schurr, Milind Tambe **Agent-based Simulations for Disaster Rescue Using the DEFACTO Coordination System** *Emergent Information Technologies and Enabling Policies for Counter Terrorism Wiley-IEEE Press, 2005*

Nathan Schurr, Rajiv Maheswaran, Paul Scerri, and Milind Tambe **From STEAM to Machinetta: The evolution of a BDI teamwork model** *Cognition and Multiagent Interaction: From Cognitive Modeling to Social Simulation* 2004

Workshop and Symposia Papers

Nathan Schurr, Pradeep Varakantham, Emma Bowring, Milind Tambe, and Barbara Grosz **Asimovian Multiagents: Applying Laws of Robotics to Teams of Humans and Agents** *Programming Multiagent Systems Workshop at The Fifth International Joint Conference on Autonomous Agents and Multiagent Systems (AAMAS)* 2006

Nathan Schurr, Pratik Patil, Fred Pighin, Milind Tambe **Lessons Learned from Disaster Management** *Agent Technology for Disaster Management Workshop at The Fifth International Joint Conference on Autonomous Agents and Multiagent Systems (AAMAS)* 2006

Nathan Schurr, Janusz Marecki, Milind Tambe, J. P. Lewis, Nikhil Kasinadhuni **The Future of Disaster Response: Humans Working with Multiagent Teams using DEFACTO** *American Association Artificial Intelligence (AAAI) Spring Symposium on AI Technologies for Homeland Security* 2005

Nathan Schurr, Paul Scerri, Milind Tambe **Coordination Advice: A Preliminary Investigation of Human Advice to Multiagent Teams** *American Association for Artificial Intelligence (AAAI) Spring Symposium on Interaction between Humans and Autonomous Systems over Extended Operation* 2004

Nathan Schurr, Paul Scerri, Milind Tambe **Impact of Human Advice on Agent Teams: A Preliminary Report Proceedings of Workshop on Humans and Multiagent Systems** *The Second International Joint Conference on Autonomous Agents and Multiagent Systems* 2003

Paul Scerri, Lewis Johnson, David V. Pynadath, Paul Rosenbloom, Nathan Schurr, Mei Si, and Milind Tambe **Getting Robots, Agents and People to Cooperate: An Initial Report** *American Association for Artificial Intelligence (AAAI) Spring Symposium on Human Interaction with Autonomous Systems in Complex Environments* 2003

Honors

Invited Panelist at Fiction Science Conference with Larry Niven - 2007

Awarded Viterbi School of Engineering Homeland Security Center Doctoral Fellowship - 2005 to 2006

Chosen to meet with Tom Ridge, Secretary of Homeland Secretary - 2004

Member of Tau Beta Pi Engineering Honor Society and Eta Kappa Nu Honor Society - 2000 to present

Professional Activities

• Committees

- Program Committee for Embodied Agents for Disaster Mitigation - Robotics: Science and Systems Workshop 2007
- Program Committee for Programming Multiagent Systems - AAMAS Workshop 2007
- Organizing Committee for Persistent Assistants: Living and Working with AI - AAAI Spring Symposium 2005
- Program Committee for AI Technologies for Homeland Security - AAAI Spring Symposium 2005
- Technical Chair for 2nd International Workshop on Safety and Security in Multiagent Systems - AAMAS Workshop 2005

• Reviews

- Journal of Artificial Intelligence Research (JAIR)
- International Joint Conference on Artificial Intelligence (IJCAI)
- RoboCup Symposium
- International Journal on Knowledge and Information Systems (KAIS)
- Association for the Advancement of Artificial Intelligence (AAAI) Spring Symposium

- International Conference on Intelligent Human Computer Systems for Crisis Response and Management (ISCRAM)

Presentations

Invited Panelist at Transformations 3: Fiction Science - **How Science Fiction Can Influence Science Fact** - March 2007

Invited speaker to University of Rome La Sapienza - **Lessons Learned from the DEFACTO System** - December 2006

Presented to Dr. John Hennessy, President of Stanford University - February 2006

Invited speaker to the Institute of Creative Technology (ICT) - **Using Multiagent Teams to Improve the Training of Incident Commanders** - January 2006

Invited speaker to York University, UK - **Impact of Human Advice on Agent Teams** - March 2004

Presented to Tom Ridge, the Secretary of Homeland Security - February 2004

Publicity

Interviewed for National Public Radio

Featured in Daily Breeze newspaper

Research appeared on Fox 11 news

Interviewed for and appeared on UPN 13 news

Hobbies

Perform at Improv Olympic West theater in Hollywood

Making short films

Co-founded International Food Group (IFG)