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PROFESSIONAL APPOINTMENTS

2008 **Postdoctoral Research Associate – Department of Computer Science**
UNIVERSITY OF MASSACHUSETTS LOWELL, Lowell, MA

2003–2008 **Graduate Researcher – Robotics Institute**
CARNEGIE MELLON UNIVERSITY, Pittsburgh, PA

2001–2003 **Undergraduate Research Assistant – Department of Computer Science and Engineering**
UNIVERSITY OF MINNESOTA–TWIN CITIES, Minneapolis, MN

EDUCATION

2008 **Ph.D. in Robotics**. Carnegie Mellon University, Robotics Institute, Pittsburgh, PA.
Focus of Study : Human-Robot Interaction
Dissertation : *"Robot-Proxy Grounding"*
Advisors : Dr. Illah Nourbakhsh and Dr. David Wettergreen

2005 **M.S. in Robotics**. Carnegie Mellon University, Robotics Institute, Pittsburgh, PA.

2003 **B.S. in Computer Science**. University of Minnesota–Twin Cities, Computer Science Department, Minneapolis, MN. Minor in Anthropology. *Summa cum laude* with High Distinction.

RESEARCH EXPERIENCE

Fall 2008–present **Robotics Lab – Dr. Holly Yanco**
–Conducting preliminary research on how to foster appropriate levels of trust in robots.
–Working with Crotched Mountain Rehabilitation Center to adapt the GigaPan high-resolution imaging system for use by students with motor and cognitive disabilities.
–Coordinating the establishment of an umbrella organization of science, technology, engineering, and math (STEM) K-12 outreach programs at UMass Lowell.
–Coordinating the establishment of three centers of robotics outreach at UMass Lowell, Carnegie Mellon, and Brooklyn College.
–Co-organizer of STREAM 2009 (stream.cs.uml.edu), a workshop to help K-12 educators utilize robotics as they teach STEM (science, technology, engineering, and math) subjects. Workshop to be held June 25–26, 2009, at iRobot in Bedford, MA. Supporters include the Massachusetts Technology Leadership Council (MTLC), the Commonwealth Alliance for Information Technology Education (CAITE), iRobot, and the University of Massachusetts Lowell.

Spring 2008 **Robot Diaries Project – Dr. Illah Nourbakhsh**
–Worked on the development of curricula and assessment tools for the Robot Diaries Project, a robotics outreach program targeted towards middle-school girls.

RESEARCH EXPERIENCE (cont.)

2003–2008

Life in the Atacama Project – Dr. David Wettergreen
–Conducted ethnographic study of the Life in the Atacama remote exploration robotics mission.
–Analyzed data to determine how a lack of common ground between scientists, engineers, and the robot resulted in errors and miscommunications.

Personal Exploration Rover Project – Dr. Illah Nourbakhsh
–Designed and executed a study of long-term human-robot interaction between museum employees and the Personal Exploration Rover.
–Worked with researchers at the University of Pittsburgh to formulate a new framework useful for examining complex human-robot systems.

2001–2003

Artificial Intelligence, Robotics, and Vision Lab – Dr. Nikolaos Papanikolopoulos
–Worked at the Center for Distributed Robotics improving the existing software architecture for a group of miniature robots.
–Worked on improving computer vision for intersection monitoring as part of the Intelligent Transportation Project.

TEACHING

2006–2008

Graduate Teaching Fellow – Eberly Center of Teaching Excellence
CARNEGIE MELLON UNIVERSITY, Pittsburgh, PA
–Position involved conducting in-class observations of teaching assistants to provide them with detailed feedback on their teaching.

Spring 2006

Graduate Teaching Assistant – Systems Engineering
CARNEGIE MELLON UNIVERSITY, Pittsburgh, PA
–Masters-level course
–Created and graded homework assignments, presented guest lectures.

Spring 2005

Graduate Teaching Assistant – Fundamentals of Artificial Intelligence
CARNEGIE MELLON UNIVERSITY, Pittsburgh, PA
–Upper-level undergraduate course
–Created and graded homework assignments, held office hours, presented guest lectures, proctored and graded exams.

SERVICE

present

Member of the organizing committee for the HRI10 Pioneers Workshop
Member of the program committee for the British Computer Society HCI 2009 workshop, "Beyond Gray Droids : Domestic Robot Design for the 21st Century"
Member of the National Science Foundation Cyber-Physical Systems review panel "Human in the Loop (Interface, Vision, Haptics)"
Program coordinator of the UML Computer Science Mentoring Program, sponsored by UML Women in Computer Science (WiCS)

2009

Co-chair of the late-breaking short paper track for HRI09
Member of the organizing committee for the 2009 AAAI Spring Symposium on Experimental Design for Real-World Systems

2008

Member of the organizing committee for the HRI08 Pioneers Workshop

2006–present

Reviewer for the Journal of Field Robotics, HRI07–09, CHI08, CSCW06, and RO-MAN06

INVITED TALKS

2009 *"Robot-Proxy Grounding."* Invited talk for the NASA Ames Intelligent Robotics Group, Moffett Field, CA, March 25, 2009.

"Exploring Ethnographic Observation." Invited talk for the AAAI Spring Symposium on Experimental Design for Real-World Systems, Stanford, CA, March 24, 2009.

2008 *"Robotics Research at the University of Massachusetts at Lowell."* Invited talk for the Project on People and Robots Group at Carnegie Mellon University, Pittsburgh, PA, December 3, 2008.

AWARDS

2007 IEEE Robotics and Automation Society Fellowship for Women in Robotics, Honorable Mention

Intel Ph.D. Fellowship Program, Finalist

2006 Best Poster, First International Conference on Human-Robot Interaction
K. Stubbs, P. Hinds, and D. Wettergreen, "Challenges to Grounding in Human-Robot Interaction"

2004 Pennsylvania Space Grant Consortium Graduate Fellowship

2003–2006 National Science Foundation Graduate Research Fellowship

2003 Computing Research Association Outstanding Undergraduate Award, Finalist

2002 Barry M. Goldwater Scholarship

2001–2003 Best Undergraduate Sociocultural Presentation
University of Minnesota–Twin Cities Undergraduate Anthropology Conference

1999–2002 Institute of Technology Dean's List, University of Minnesota–Twin Cities

PUBLICATIONS

Journal Articles

2007 Kristen Stubbs, Pamela Hinds, and David Wettergreen. Autonomy and common ground in human-robot interaction : A field study. *IEEE Intelligent Systems, Special Issue on Interacting with Autonomy*, 22(2) :42–50, March–April 2007.

Kimberley A. Warren-Rhodes, Jennifer L. Dungan, Jennifer Piatek, Kristen Stubbs, Benito Gomez-Silva, Yong Chen, and Christopher P. McKay. Ecology and spatial pattern of cyanobacterial community island patches in the Atacama Desert, Chile. *Journal of Geophysical Research*, 112 :G04S15, 2007.

Jennifer L. Piatek, Craig Hardgrove, Jeffrey E. Moersch, Darrell M. Drake, Michael B. Wyatt, Michael Rampey, Orion Carlisle, Kimberley Warren-Rhodes, James M. Dohm, Andrew N. Hock, Nathalie A. Cabrol, David S. Wettergreen, Edmond A. Grin, Guillermo Chong Diaz, Peter Coppin, Shmuel Weinstein, Charles S. Cockell, Lucia Marinangeli, Gian Gabriele Ori, Trey Smith, Dominic Jonak, Michael Wagner, Kristen Stubbs, Geb Thomas, Erin Pudenz, and Justin Glasgow. Surface and subsurface composition of the Life in the Atacama field sites from rover data and orbital image analysis. *Journal of Geophysical Research*, 112 :G04S04, 2007.

Andrew N. Hock, Nathalie A. Cabrol, James M. Dohm, Jennifer Piatek, Kimberley Warren-Rhodes, Shmuel Weinstein, David S. Wettergreen, Edmond A. Grin, Jeffrey E. Moersch, Charles S. Cockell, Peter Coppin Lauren Ernst, Gregory Fisher, Craig Hardgrove, Lucia Marinangeli, Edwin Minkley, Gian Gabriele Ori, Alan Waggoner, Mike Wyatt, Trey Smith, David Thompson, Michael Wagner, Dominic Jonak, Kristen Stubbs, Geb Thomas, Erin Pudenz, and Justin Glasgow. Life in the Atacama : A scoring system for habitability and the robotic exploration for life. *Journal of Geophysical Research*, 112 :G04S08, 2007.

2003 Colin McMillen, Kristen Stubbs, Paul E. Rybski, Sascha A. Stoeter, Maria Gini, and Nikolaos Papanikolopoulos. Resource scheduling and load balancing in distributed robotic control systems. *Robotics and Autonomous Systems*, 44(3–4) :251–259, 2003.

2002 Sascha A. Stoeter, Paul E. Rybski, Kristen N. Stubbs, Colin P. McMillen, Maria Gini, Dean F. Hougen, and Nikolaos Papanikolopoulos. A robot team for surveillance tasks : Design and architecture. *Robotics and Autonomous Systems*, 40(2–3) :173–183, August 2002.

Refereed Conference Publications

2009 Munjal Desai, Kristen Stubbs, Aaron Steinfeld, and Holly Yanco. Creating Trustworthy Robots : Lessons and Inspirations from Automated Systems. In *Proceedings of the AISB Convention : New Frontiers in Human-Robot Interaction*, 2009.

2008 Kristen Stubbs, David Wettergreen, and Illah Nourbakhsh. Using a robot proxy to create common ground in an exploration task. In *Proceedings of the Third ACM/IEEE Conference on Human-Robot Interaction*, pages 375–382. ACM, March 2008.

2006 Kristen Stubbs, Pamela Hinds, and David Wettergreen. Challenges to grounding in human-robot interaction : Sources of errors and miscommunications in remote exploration robotics. In *Proceedings of the First International Conference on Human-Robot Interaction*. ACM, 2006. Awarded Best Poster.

Kristen Stubbs, Debra Bernstein, Kevin Crowley, and Illah Nourbakhsh. Cognitive evaluation of human-robot systems : A method for analyzing cognitive change in human-robot systems. In *Proceedings of the 15th IEEE International Symposium on Robot and Human Interactive Communication (RO-MAN)*, pages 59–65, September 2006.

2005 Kristen Stubbs, Debra Bernstein, Kevin Crowley, and Illah Nourbakhsh. Long-term human-robot interaction : The Personal Exploration Rover and museum docents. In *Proceedings of the 12th International Conference on Artificial Intelligence in Education*, pages 621–628, July 2005.

2003 Kristen Stubbs. Kana no Senshi (Kana Warrior) : a new interface for learning Japanese characters. In *Proceedings of the 2003 Conference on Human Factors and Computing Systems (CHI '03) Extended Abstracts on Human Factors in Computer Systems, Ft. Lauderdale, Florida, USA*, April 2003. Poster presentation.

Bradley Kratochvil, Ian T. Burt, Andrew Drenner, Derek Goerke, Bennett Jackson, Colin McMillen, Christopher Olson, Nikolaos Papanikolopoulos, Adam Pfeifer, Sascha A. Stoeter, Kristen Stubbs, and David Waletzko. Heterogeneous implementation of an adaptive robotic sensing team. In *Proceedings of the IEEE International Conference on Robotics and Automation, Taipei, Taiwan*, May 2003.

2002 Andrew Drenner, Ian Burt, Brian Chapeau, Tom Dahlin, Bradley Kratochvil, Colin McMillen, Brad Nelson, Nikolaos Papanikolopoulos, Paul E. Rybski, Kristen Stubbs, David Waletzko, and Kemal Berk Yesin. Design of the UMN multi-robot system. In Alan C. Schultz and Lynne E. Parker, editors, *Multi-Robot Systems : From Swarms to Intelligent Automata*. Kluwer Academic Publishers, May 2002.

Andrew Drenner, Ian Burt, Tom Dahlin, Bradley Kratochvil, Colin McMillen, Brad Nelson, Nikolaos Papanikolopoulos, Paul E. Rybski, Kristen Stubbs, David Waletzko, and Kemal Berk Yesin. Mobility enhancements to the scout robot platform. In *Proceedings of the 2002 IEEE International Conference on Robotics and Automation, Washington D.C., USA*, May 2002.

Colin McMillen, Kristen Stubbs, Paul E. Rybski, Sascha A. Stoeter, Maria Gini, and Nikolaos Papanikolopoulos. Resource scheduling and load balancing in distributed robotic control systems. In *Proceedings of the International Conference on Intelligent Autonomous Systems, Marina del Rey, CA, USA*, March 2002.

Technical Reports

2008 Kristen Stubbs. Robot-proxy grounding. Technical Report CMU-RI-TR-08-37, Carnegie Mellon University, August 2008. PhD Thesis.

Emily Hamner, Tom Lauwers, Debra Bernstein, Kristen Stubbs, Kevin Crowley, and Illah Nourbakhsh. Robot diaries interim project report : Development of a technology program for middle school girls. Technical Report CMU-RI-TR-08-25, Carnegie Mellon University, May 2008.

2006 Kristen Stubbs, Pamela Hinds, and David Wettergreen. Challenges to grounding in human-robot collaboration : Errors and miscommunications in remote exploration robotics. Technical Report CMU-RI-TR-06-32, Carnegie Mellon University, July 2006.

2004 Kristen Stubbs and Illah Nourbakhsh. An analysis of the Intelligent Robotics Group's experience with the Mars Exploration Rover mission. Technical Report CMU-RI-TR-04-45, Carnegie Mellon University, September 2004.