



Kristen Stubbs, Ph.D.

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PROFESSIONAL APPOINTMENTS

Industry Experience

2009–2011 Sr. Science, Technology, Engineering & Math (STEM) Outreach Program Manager
IROBOT CORPORATION, Bedford, MA

Academic Experience

2008–2009 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.

JOB EXPERIENCE

Industry Experience

Summer 2009–Spring 2011

iRobot Corporation – Nancy Dussault-Smith, VP Corporate Communications

- Organized National Robotics Week at the national level and in the Boston area (www.nationalroboticsweek.org). The first National Robotics Week in 2010 included over 50 affiliated events in 21 states, DC and Puerto Rico. Over 46,000 people participated, including over 24,000 K-12 students. The second National Robotics Week in 2011 included over 100 affiliated events in 22 states, DC, Puerto Rico and online.
- Managed content for the SPARK website (spark.irobot.com), an educational robotics web portal which features links to curricula and activities for students in kindergarten through college. SPARK includes information on a variety of robotics platforms as well as articles demonstrating how educators around the United States are utilizing robotics to teach students.
- Co-organized STREAM (stream.cs.uml.edu), a workshop to help K-12 educators utilize robotics as they teach STEM (science, technology, engineering, and math) subjects. To date, over 90 educators have participated in STREAM workshops.
- Ran iRobot's employee volunteer program, which includes training employees to present robotics demonstrations to students, connecting employees with STEM volunteer opportunities and recognizing employee participation.
- Acted as de facto product manager of the iRobot Create, which has included launching an educators' discount program and supporting K-16 educators through equipment donations and dissemination of curricula.
- Served on the Boy Scouts advisory committee for a new Robotics merit badge to be launched during National Robotics Week 2011.
- Managed a team of two educators and coordinated with PR firm Fleishman-Hillard to plan and execute the "20 in 20" program. For this program, iRobot gave robot demonstrations at 20 schools around Massachusetts in honor of the company's 20th anniversary.

Academic Experience

Fall 2008–Summer 2009

Robotics Lab – Dr. Holly Yanco

- Conducted preliminary research on how to foster appropriate levels of trust in robots.
- Co-organized STREAM 2009 (stream.cs.uml.edu) educators' workshop.

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.

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.

JOB EXPERIENCE (cont.)

- 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.

INVITED TALKS

- 2011** *"How Robots Are Taking Over the World (of Education)"*, Google Tech Talk, New York, NY, February 17, 2011.
- "Telepresence : What's That ?"*, 92nd St. YMCA, New York, NY, February 16, 2011.
- 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 AAI 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

- 2010** Mass High Tech Education Innovation Award presented to iRobot for the "20 in 20" school visit program
- 2007** IEEE Robotics and Automation Society Fellowship for Women in Robotics, Honorable Mention
- Intel Ph.D. Fellowship Program, Finalist

SELECTED PUBLICATIONS

- 2009** Kristen Stubbs and Holly Yanco. STREAM : A Workshop on the Use of Robotics in K-12 STEM Education. In *IEEE Robotics and Automation Magazine*, December 2009.
- 2008** 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, 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.
- 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.