

Samuel Spaulding

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Education

- **Massachusetts Institute of Technology**
Graduate Research Assistant & S.M. Candidate
Advisor: Cynthia Breazeal

Cambridge, MA
Personal Robots Group, MIT Media Lab
2013 - present

- **Research Focus:** I am working on applications of Artificial Intelligence for Human-Robot Interaction, specifically designing and building robotic systems that exhibit social intelligence, are easy for people to interact with, and can provide engaging and educational experiences. I am particularly interested in designing robots that can build models of students based on multi-modal, affective data in educational tutoring interactions.
- **Relevant Coursework:** How to Make (almost) Anything, Affective Computing, Mixed Multi-Agent Networks, The Human Intelligence Enterprise

- **Yale University**
B.S. with Distinction, Computer Science

New Haven, CT
2009-2013

Work Experience

- **Walt Disney Imagineering - Research**
Research Associate
Advisor: Jonathan Yedidia

Cambridge, MA
Summer 2012

- Worked on a Machine Learning research project. As a member of a Natural Language Processing research team, I was integrally involved in design, implementation, testing, and production of a prototype sentiment analysis system for Walt Disney Imagineering.
- Our project, "**Making Sense of the Blogosphere: Semantic Analysis of Text Mined from the Web**" won the **Judges' Special Distinction - Methodology** award in the company-wide 2012 Business Intelligence and Data Analytics Competition

- **Amazon.com**
Software Development Engineer Intern

Seattle, WA
Summer 2011

- Designed and developed a website that produced dynamic client-side graphs based on internal team metrics. Responsible for the project from design, through implementation, and into production.
- Member of a four-person team whose submission, an Android app called "SmileIKnow" was a finalist at the 2011 Amazon Mobile Security Hackathon

- **Yale Social Robotics Laboratory**
Undergraduate Research Assistant
Advisor: Brian Scassellati

New Haven, CT
Summer 2010 - May 2013

- Responsibilities included designing, implementing, and testing AI/Robotics systems and conducting Human-Robot Interaction research.

Publications

Peer-Reviewed Conference Publications

- [C3] W. Bradley Knox, **Samuel Spaulding**, and Cynthia Breazeal. "**Learning from the Wizard: Evaluation of Children's Interactions with an Autonomous Robotic Educational Companion**" *In submission* to the 10th ACM/IEEE International Conference on Human-Robot Interaction (HRI 2015).
- [C2] Dan Leyzberg, **Samuel Spaulding**, and Brian Scassellati. "**Personalizing Robot Tutors to Individuals' Learning Differences**" Presented at the 9th ACM/IEEE International Conference on Human-Robot Interaction (HRI 2014).

- [C1] Dan Leyzberg, **Samuel Spaulding**, Mariya Toneva, and Brian Scassellati. "**The Physical Presence of a Robot Tutor Increases Cognitive Learning Gains**" Presented at the 34th Annual Meeting of the Cognitive Science Society (Cog Sci 2012)

Peer-Reviewed Workshop Papers

- [W2] W. Bradley Knox, **Samuel Spaulding**, and Cynthia Breazeal. "**Learning Social Interaction from the Wizard: A Proposal**" Presented at the 3rd Workshop on Machine Learning for Interactive Systems (MLIS '14) at AAAI 2014.
- [W1] **Samuel Spaulding** and Cynthia Breazeal. "**Animacy Perception and Mind Attribution in a Cognitive Architecture for Human-Robot Interaction**" Presented at the Workshop on Cognitive Architectures for Human-Robot Interaction at HRI 2014.

Conference Presentations

- 2014 9th ACM/IEEE International Conference on Human-Robot Interaction (HRI 2014). Presented publication [C2] "**Personalizing Robot Tutors to Individuals' Learning Differences**"

Invited Talks

- 2014 Invited Speaker, "**Fascinating Alumni: Short Talks**", Jonathan Edwards College Reunion
- 2014 Invited Lecturer, Media Arts and Sciences (MAS) Freshman Seminar
- 2013 Invited Speaker, Yale Undergraduate Science Symposium
- 2013 Invited Speaker, Yale Engineering and Science Weekend Symposium
- 2013 TEDx Speaker, "**TEDxYale: Solve for Y**" Conference
- 2012 Invited Speaker, Yale Undergraduate Science Symposium
- 2012 Invited Speaker, Yale Engineering and Science Weekend Symposium
- 2010 Invited Panelist, Yale Computer Science Department, **IBM Jeopardy! Challenge Discussion**

Awards

- 2013-2016 **National Science Foundation Graduate Research Fellowship**
Awarded 3 year fellowship to support graduate education in A.I. and Robotics
- 2013 **Mellon Undergraduate Research Grant**
Awarded funding support to attend HRI 2013 in Tokyo, Japan.
- 2012 **Sigma Xi Undergraduate Research Award**
Awarded funding support and membership in Sigma Xi Scientific Society for exceptional undergraduate research
- 2011 **First Place, Academic Competition Federation (ACF) National Championship**
As part of Yale's Quiz Bowl team, won the premier national event for collegiate academic quiz competition.
- 2010 **Jeopardy! College Championship, First Runner-up**
Won 3 of 4 games and second place overall in the Season 27 Jeopardy! College Championship

Professional Service

Reviewer: AAAI (2013), HRI (2014)

Workshop Organizer: *Student Technical Workshop*, NSF Expedition on Socially Assistive Robots

With students at partner insitutions, drafted budget, solicited and curated submissions, and coordinated program.

Technical Skills

Software: Extensive experience with Object-Oriented (Java/C/C++), Functional (LISP), and Scripting (Ruby/Python) Languages as well as MATLAB and R. Strong Web Development and Design skills including HTML/CSS/Javascript and Ruby on Rails. Experienced with Android mobile development.

Hardware: Significant fabrication training and experience with: Laser Cutter, Vinyl Cutter, CNC Mill, Molding/Casting,

Composite Materials, and 3D Printing. Significant electronics experience, including PCB design and fabrication, and circuit design for radio, motor, and sensing applications with mobile robots.

Robots: Extensive experience developing and maintaining hardware and software for multiple commercial and in-house robotic platforms, including significant development experience with ROS and OpenCV.

Commercial robots: iRobot Create, Aldebaran Nao, and BeatBots Keepon.

In-house robots: 57 DOF Mobile-Dexterous-Social (MDS) Humanoid platform, 6 DOF Dragonbot platform, and 5 DOF Affective Intelligent Driving Agent (AIDA)

Teaching Experience

2012	Course Assistant , CS 201: Introduction to Computer Science, Yale University. Tutored introductory Computer Science students 5 hours per week. Covered basic concepts like recursion through more advanced topics like formal language theory, logic, and computability theory.
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