Samuel Spaulding

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Education

- **Massachusetts Institute of Technology** **Cambridge, MA**
  Graduate Research Assistant & S.M. Candidate *Personal Robots Group, MIT Media Lab*
  Advisor: Cynthia Breazeal *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** **New Haven, CT**
  B.S. with Distinction, Computer Science *2009-2013*

Work Experience

- **Walt Disney Imagineering - Research** **Cambridge, MA**
  Research Associate *Summer 2012*
  Advisor: Jonathan Yedidia
  - 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** **Seattle, WA**
  Software Development Engineer Intern *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** **New Haven, CT**
  Undergraduate Research Assistant *Summer 2010 - May 2013*
  Advisor: Brian Scassellati
  - 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.