

**Education**

Carnegie Mellon University, Pittsburgh PA

MS, PhD in Computer Science, Advisors: Manuela Veloso and Anind Dey  
*expected May 2010, 2012*

BS in Computer Science, additional major in HCI, *May 2007, GPA 3.93*

**Research Interests**

I'm interested on differentiating traditional oracles from humans in active learning applications. People are not always interruptable, are not always correct, and are not willing to answer an infinite number of questions. However, we must balance the performance of the application with the usability of the system. I study how agents that proactively ask users for help affect the performance of and user satisfaction with the technology. I am taking both Human-Computer Interaction (HCI) and Learning/AI approaches to investigate how the each affects the other. In HCI, my research involves understanding how interruptibility, intelligibility, and the language of questions affect user responsiveness and accuracy across multiple domains. In AI, my approach is to investigate how to ask questions and incorporate responses from many, possibly unknown users asynchronously.

**Research Projects****Robot Companion for Visitors** (2009-present)

- Created a user-friendly dialog system for new visitors to request help and information from the robot while moving through the buildings
- Provides context-sensitive information to visitors about city, University, and Computer Science community events
- Incorporated User-Friendly Active Learning results for the robot to ask for both the visitors' and other community help when lost or learning from the environment

**User-Friendly Active Learning** (2008-present)

- Explored how the information (context, suggestions, feature selection, uncertainty) an intelligent agent provided before asking for help in labeling data affected the user's accuracy at labeling the data
- Studied how the agent's domain (desktop, cell phone, robot) affected the accuracy
- Presented and validated guidelines for agents' questions along the dimensions based on domain

**Learning to Trust Users as Experts** (2007-present)

- Designed new machine learning algorithms to dynamically build trust of users through the information they give the system and the consensus of all experts of the actual answer
- Classified the users of recommendation systems as experts to avoid overconfidence or distrust when providing recommendation predictions
- Successful results based on 3 product recommendation system datasets

**Senior Thesis: Reminder Systems for Families** (2006-2007)

- Designed a reminder system for dual income households
- Incorporated a variety of media to give families flexibility in how they make and receive reminders
- Used ethnographies and paper prototypes to analyze the end product

**Collaboration for Student Design Groups** (2004-2006)

- Analyzed existing systems for colocated and non-colocated design

- Performed experiment analyzing effects of location on student design groups
- Designed an intuitive software and hardware system for supporting group collaboration

**Social Robots: Carnegie Mellon Robot Receptionist (2003-2004)**

- Helped design rule-based system for natural language processing and response generation for visitors to type to the robot

**IJCAI Robot Challenge: Robots GRACE and George (2002-2003, summer 2004)**

- Designed facial expressions for robots to express mood based on visitor responses
- Designed algorithms for the robots to move around the conference quickly

**Academic Awards**

**National Science Foundation Graduate Fellow (2007)**

**National Physical Science Consortium Fellow (2007)**

**Google Anita Borg Scholarship Winner (2007)**

**CRA Outstanding Undergraduate Award Winner (2007)**

**Andrew Carnegie Society Scholar (2007)**

**Phi Beta Kappa (Fall 2006)**

Phi Kappa Phi Honors Fraternity member (2005-present)

Microsoft National Female Scholarship Winner (2006)

Boeing Leadership Scholarship Winner (2005)

Microsoft Research Academic All Star (2005)

**Publications**

Rosenthal, Stephanie, Anind Dey, Manuela Veloso. "Using Interaction to Improve Intelligence: How Intelligent Systems Should Ask Users for Input" *Workshop on Intelligence and Interaction, International Joint Conference on Artificial Intelligence 2009*.

Rosenthal, Stephanie, Manuela Veloso, Anind Dey. "Online Selection of Mediated and Domain-Specific Predictions for Improved Recommender Systems" *Workshop on Intelligent Techniques in Web Personalization and Recommender Systems, International Joint Conference on Artificial Intelligence 2009*.

Rosenthal, Stephanie, Manuela Veloso, Anind Dey. "Asking Questions and Developing Trust" *AAAI Spring Symposium - Agents that Learn from Humans Teachers, 2009*.

Rosenthal, Stephanie and S. Finger. "Design Collaboration in a Distributed Environment." *Frontiers in Education 2006*, pp. M2G-13 – 18. October 2006.

Gockley, Rachel, et. al. "Designing Robots for Long-Term Social Interaction". *Proceedings of IROS 2005*, pp. 1338 - 1343. August 2005.

Simmons, Reid, et.al. "GRACE and GEORGE: Autonomous Robots for the AAI Robot Challenge". *Mobile Robot Competition 2003, AAI*, pp. 52–62. August 2003.

**Teaching Experience**

**Teaching Assistant – CMRoboBits: Creating Intelligent Robots (Fall 2008)**

- Elective for students interested in robotics
- Ran laboratory classes for students to present their robots and provide information about completing the following week's assignment

**Teaching Assistant – Data Structures and Algorithms (Summer 2008)**

- Core computer science class for freshmen undergraduates
- Taught recitations, held office hours, designed homeworks, graded assignments

**Course Assistant – Principles of Computation (Spring 2007)**

- Introduction to theoretical computer science for non-majors
- Held office hours and graded assignments

**Course Assistant – Effective Programming in C and UNIX** (Fall 2006)

- Pre-requisite course to introduce systems programming before the core CS classes
- Helped design homeworks, held office hours, and graded assignments

**Member of the Computer Science Curriculum Committee** (2005-2007)

- Reviewed and Updated the Carnegie Mellon undergraduate curriculum in CS

**Corporate  
Experience**

**Program Manager Internship at Microsoft Corporation** (summer 2006)

- Helped brainstorm demo ideas for applications of the Microsoft Surface
- Designed, wrote specs, drove development/testing, produced UI, completed demo

**Program Manager Internship at Microsoft Corporation** (summer 2005)

- Designed, specified, and drove development for three features for the Windows Presentation Foundation SDK

**Computer  
Science  
Outreach**

**SCS Day** (2004-8) – Chair of Workshops (2006), SCS Day Committee Chair (2007-8)

- All day events celebrating the diverse interests of the CMU SCS community

**Speaker and Volunteer at Girls' Technology Nights** (2005-present)

- Providing hands-on activities for middle school girls to explore possibilities in CS

**Computer Science Roadshows** (2003-present)

- Visiting middle and high schools promoting computer science as a possible career)