

# Aditi Ramachandran

aditiramachandran@gmail.com • <http://aditiramachandran.com>

## EDUCATION

*PhD, Yale University, August 2012 – current*

Field: Computer Science

Advisor: Dr. Brian Scassellati, Yale Social Robotics Lab

*M.Phil, Yale University, August 2012 – May 2015*

Advisor: Dr. Brian Scassellati, Yale Social Robotics Lab

*M.S., Yale University, August 2012 – May 2015*

*B.S., Georgetown University, August 2006 – May 2010*

Major: Mathematics, Computer Science

GPA: 3.86/4.00

Honors: Magna Cum Laude, Phi Beta Kappa

### Awards:

- Clare Boothe Luce Scholarship: awarded for August 2008-May 2010  
Financial support covering full tuition, room and board, and additional expenses
- First Honors: Spring 2007, Fall 2007, Spring 2008, Fall 2008, Spring 2009
- Second Honors: Fall 2009, Spring 2010
- Dean's List: Fall 2006

## RESEARCH EXPERIENCE

*Yale University Social Robotics Lab – Research Assistant*

*Aug 2012 – current*

Working on projects funded by NSF Expedition grant involving socially assistive robotics. Implemented and conducted multiple human-robot interaction studies in which children interact with autonomous robots. Currently conducting dissertation research involving robots as autonomous tutoring agents, with the goal of providing personalization within tutoring interactions. Specifically investigating various supportive behaviors that a robot tutor can provide to children during math-based tasks.

*Georgetown University Dept. of Computer Science – Research Assistant*

*Jan 2009-May 2010*

Worked on research project with faculty member involving reidentification and matching publicly available data from different social networks to correctly identify a person. Wrote several Python scripts to automate the collection of public data from social networking websites. Examined the role that friendship links within social networks have in matching users across datasets.

## WORK EXPERIENCE

*The MITRE Corporation – Artificial Intelligence Engineer*

*Aug 2010-June 2012*

Worked on two projects involving agent-based modeling for government sponsors. Specifically, conducted a sensitivity analysis of a counterinsurgency agent-based model, and generated novel data visualization products used for output analysis. Worked on a research project involving applying self-organizing maps to pixel classification of hyperspectral images. Worked on implementing an efficient path planner for agents in a large agent-based model.

*National Security Agency – Computer Science Intern*

*May - Aug 2009*

Completed the Computer Science Intern Program and held top secret clearance. Developed software to assess a variety of short path measures between two nodes within complex networks. Applied advanced clustering techniques to discriminate between possible origins of intercepted foreign communications. Extended Java skills to include XML digestion and Java XML binding, relational

database connectivity and use of Hibernate for object-relational mapping, and JFreeChart, an open-source visualization suite.

*Carnegie Mellon University – Summer Applied Mathematics Institute*

*May - July 2008*

Completed a course on mathematical finance and a course on using the program Maple at CMU. Worked on a project investigating interest rate modeling under the guidance of a graduate student. Attended seminars on current topics in mathematical research.

## TEACHING EXPERIENCE

*Yale University Dept. of Computer Science – Teaching Assistant*

*4 semesters 2013 - 2016*

Graded assignments for students of upper level course called Intelligent Robotics. Held weekly office hours, extra help meetings, and review sessions for exams. Designed problem sets with other TAs relevant to the class material.

*Georgetown University Dept. of Computer Science – Teaching Assistant*

*4 semesters 2007 - 2009*

Conducted a lab portion of an introductory computer science class. Taught basic html and JavaScript programming. Graded homework and projects. Held office hours to assist students with questions and provide extra help.

## PUBLICATIONS

*Peer-reviewed Conference Publications*

**Aditi Ramachandran**, Chien-Ming Huang, Brian Scassellati. 2017. Give Me a Break! Personalized Timing Strategies to Promote Learning in Robot-Child Tutoring. In Proceedings of the 12th ACM/IEEE International Conference on Human-Robot Interaction (HRI 2017). Vienna, Austria, March 6-9.

**Aditi Ramachandran**, Alexandru Litoiu, Brian Scassellati. 2016. Shaping Productive Help-Seeking Behavior During Robot-Child Tutoring Interactions. In Proceedings of the 11th ACM/IEEE International Conference on Human-Robot Interaction (HRI 2016). Christchurch, New Zealand, March 7-10. *Nominated for best paper award for "Studies of HRI"!*

Bradley Hayes, Elena Corina Grigore, Alexandru Litoiu, **Aditi Ramachandran**, Brian Scassellati. 2014. A Developmentally Inspired Transfer Learning Approach for Skill Proficiency Assessment. In 4th International Conference on Development and Learning and on Epigenetic Robotics (ICDL 2014). IEEE, Genoa, Italy, October 13-16.

Elaine Short, Katelyn Swift-Spong, Jillian Greczek, **Aditi Ramachandran**, Alexandru Litoiu, Elena Corina Grigore, David Feil-Seifer, Samuel Shuster, Jin Joo Lee, Shaobo Huang, Svetlana Levonisova, Sarah Litz, Jamy Li, Gisele Ragusa, Donna Spruijt-Metz, Maja Mataric, Brian Scassellati. 2014. How to Train Your DragonBot: Socially Assistive Robots for Teaching Children About Nutrition Through Play. In Robot and Human Interactive Communication, 2014 (ROMAN 2014). IEEE, Edinburgh, United Kingdom, August 25-29.

**Aditi Ramachandran**, Lisa Singh, Edward Porter, Frank Nagle. 2012. Exploring Reidentification Risks in Public Domains. In the Proceedings of the Conference on Privacy, Security, and Trust (PST 2012). IEEE, Paris, France, July 16-18. *Best student paper award!*

*Peer-reviewed Workshop Publications*

Sarah Strohkorb, Chien-Ming Huang, **Aditi Ramachandran**, Brian Scassellati. 2016. Establishing Sustained, Supportive Human-Robot Relationships: Building Blocks and Open Challenges. In Proceedings of the AAAI Spring Symposium on Enabling Computing Research in Socially Intelligent Human-Robot Interaction. Palo Alto, California, USA, March 21-23.

**Aditi Ramachandran**, Brian Scassellati. 2015. Developing Adaptive Social Robot Tutors for Children. In Proceedings of the AAAI Fall Symposium on Artificial Intelligence and Human-Robot Interaction (AI-HRI 2015). Arlington, Virginia, USA, November 13-15.

**Aditi Ramachandran**, Brian Scassellati. 2015. Fostering Learning Gains Through Personalized Robot-Child Tutoring Interactions. In Proceedings of the HRI Pioneers Workshop at the Tenth ACM/IEEE Conference on Human-Robot Interaction (HRI 2015). Portland, Oregon, USA, March 2.

**Aditi Ramachandran**, Brian Scassellati. 2014. Adapting Difficulty Levels in Personalized Robot-Child Tutoring Interactions. In Proceedings of the 3rd Workshop on Machine Learning for Interactive Systems: Bridging the Gap between Perception, Action and Communication (MLIS '14) in Workshops at the Twenty-Eighth AAAI Conference on Artificial Intelligence. ACM, Quebec City, QC, Canada, July 28.

#### *Theses*

**Aditi Ramachandran**. 2010. Re-identification matching across social network sites—A senior thesis. Technical Report CSTR-20100505-5. Department of Computer Science, Georgetown University, Washington, DC 20057.

### **REFEREEING: CONFERENCES AND JOURNALS**

- ACM/IEEE International Conference on Human-Robot Interaction (HRI): 2015-2017
- IEEE International Conference on Robotics and Automation (ICRA): 2017
- International Conference on Intelligent Virtual Agents (IVA): 2017
- International Journal of Social Robotics (IJSR): 2016, 2017
- International Journal of Robotics Research (IJRR) – Special Issue on HRI: 2016
- IEEE Symposium on Robot and Human Interactive Communication (RO-MAN): 2016
- IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS): 2014-2016
- AAAI Fall Symposium on Artificial Intelligence in Human-Robot Interaction (AI-HRI): 2015
- International Conference on Social Robotics (ICSR): 2015
- AAAC International Conference on Affective Computing and Intelligent Interaction (ACII): 2015

### **ACTIVITIES/ORGANIZATIONS**

Robotics Outreach	Aug 2012 - present
Regularly participate in a variety of outreach activities showcasing robots from the Yale Social Robotics lab at open houses, visits to local schools, and public events.	
Yale Jashan Bhangra Dance Team	Aug 2012 - present
Lead team as co-captain for 2013-2014 academic year.	
GU Jawani Bhangra Dance Team, DC Metro Punjabi Arts Academy Dance Team	Aug 2008 - June 2012
Georgetown University Peer Advisor	May 2007 - May 2010
Advised and mentored incoming math majors	
Georgetown University South Asian Society Member/Choreographer	Aug 2006 - May 2010
Choreographed for and actively participated in Rangila, Georgetown's largest annual cultural show, in addition to other SAS activities throughout each year.	

### **COMPUTER SKILLS**

Programming: C, C++, Java, Python, Javascript, HTML, SQL, ROS  
Development Environments: Vim, Xcode, Eclipse, Android Studio  
Versioning: Git, SVN