Natalie Freed

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Education

Massachusetts Institute of Technology Media Lab
Master of Science in Media Arts and Sciences projected May 2012. Present GPA 4.0/4.0

Arizona State University Ira A. Fulton School of Engineering and Barrett Honors College
Master of Science in Computer Science with Arts, Media, and Engineering concentration May 2010. GPA 4.0/4.0
Bachelor of Science in Computer Science May 2009. Summa cum laude, GPA 3.86/4.0

Research

Sep. 2010 – present
Robotic Playmates for Second Language Learning in Preschool; Playtime Computing
Personal Robots Group at MIT Media Lab; advisor Dr. Cynthia Breazeal
→ Performing ongoing research in social robotics and novel educational technologies for children

Sep. 2008 – May 2010
Toys Keeping in Touch: Playful Tangible Interfaces for Remote Interactions
Arizona State University Fulton Undergraduate Research Initiative and Honors Thesis; Dr. Winslow Burleson
→ Performed research in distance communications and user interfaces for K-5 children
→ Project was awarded $10,000 University Grant from Nokia Corporation

Sep. 2007 – Sep. 2008
Active Learning Environment with Robotic Tangibles (ALERT)
→ Worked with a team to develop innovative robotics curriculum modules for Arizona high school students
→ Created development platform, developed and tested pedagogy in core programming concepts

Sept. 2008 – Nov 2008
Supercomputing 2008 Cluster Challenge
ASU High Performing Computing Initiative, Microsoft Corporation
→ Led team of undergraduates in parallel computing competition at National Supercomputing Conference
→ Ported scientific codes to Windows HPC Server 2008 platform

Sep. 2007 – Aug. 2008
Paradigms for Parallel Computation
ASU High Performing Computing Initiative; advisor Dr. Dan Stanzione
→ Team project to evaluate programming paradigms in high performance computing
→ Ported scientific applications representative of a range of computational models into Unified Parallel C

Employment

June 2010 – August 2010
Nokia Research Center I.D.E.A. Team, Palo Alto, California, Intern
→ Participated in development and in-depth user evaluation of a novel online reading tool for families
→ Prototyped independent project about a long-distance communication toolkit

Dec 2009, March 2010
Burgeon Group, Phoenix, Arizona, Intern
→ Developed and programmed electronic installations for children's libraries
→ Trained staff in electronics and microcontroller programming

Oct. 2006 – Dec. 2008
High Performance Computing Initiative, Arizona State University, Student Worker
→ Custom compiled and installed cluster-wide software for users on 2000+ core research cluster
→ Performed system benchmarks to inform choice of file system during major system upgrade
→ Wrote user and administrator documentation and automation scripts

Sep. 2005 – July 2007
Hayden Library, Arizona State University, Student Worker
→ Prepared presentation materials for library workshops
→ Catalogued and maintained library acquisitions

Skills

Systems Linux administration, Mac OS X, Windows.

Software Microsoft Office. Adobe Suite: Photoshop, Illustrator, InDesign. Eclipse IDE. Eagle PCB Layout. 3D modeling in Rhino, SolidWorks, SketchUp. iMovie.

Languages Java, C, Python, Max/MSP, bash shell scripting. Familiar with C++, Scheme, Prolog, Perl, HTML, JSP, SQL, Drupal, Android, Mac OS X Applescript. Arduino IDE, microcontroller programming in C, parallel programming in C (MPI and UPC), threads and network programming in Java.

Fabrication Laser cutter, vinyl cutter, CNC milling, hand and machine sewing, 3D printing, molding and casting, digital and analog electronics, wood shop and machine shop tools.

Teaching

July 2009, July 2010 Center for New Music and Audio Technology, University of California Berkeley, Teaching Assistant
→ Built physical demonstrations for electronic textiles and microcontroller programming workshop
→ Assisted workshop participants in developing physical computing projects

Publications

Freed, N., Qi, J., Sylla, C., Branco, P. **Beyond the Binding: Exploring the Future Book**. In *Proceedings of the 8th ACM conference on Creativity and cognition*, Atlanta, Georgia. November 2011.

Freed, N., Qi, J., Setapen, A., Buechley, L., Breazeal, C., Raffle, H. **Sticking Together: Handcrafting Personalized Communication Interfaces**. *Proceedings of the Conference on Interaction Design and Children*, Ann Arbor, Michigan. June 2011.

Raffle, H., Revelle, G. ,Mori, K., Ballagas, R., Buza, K., Horii, H., Kaye, J., Cook, K., Freed, N., Go, J., Spasojevic, M. **Hello, Is Grandma There? StoryVisit: Family Video Chat and Connected E-Books**. *CHI 2011*, Vancouver, B.C. May 2011.

Freed, N., Burleson, W., Raffle, H., Ballagas, T. & Newman, N. "**User interfaces for tangible characters: Children connecting remotely through toy perspectives**," *Proceedings of the Conference on Interaction Design and Children*, Barcelona, Spain. June 2010.

Freed, N. **Toys Keeping In Touch: Technologies for Distance Play**, Student Paper, *Proceedings of the Fourth International Conference on Tangible, Embedded and Embodied Computing*, Cambridge, MA. January 2010.

Freed, N. Giles, Z., Jimenez, B. G., Lu, P., Wellington, R.A., "**Windows HPC Server 2008 at the SC08 Cluster Challenge**," *Linux Clusters Institute Conference*, Boulder, CO. March 2009.

Lahey, B., Burleson, W., Jensen, C. N., Freed, N., and Lu, P. 2008. "**Integrating video games and robotic play in physical environments**," *Proceedings of the 2008 ACM SIGGRAPH Symposium on Video Games*, New York, NY, 107-114

Speyer, G., Freed, N., Akis, R., Stanzione, D., and Mack, E. 2008. "**Paradigms for Parallel Computation**." *Proceedings of the 2008 DoD HPCMP Users Group Conference*. IEEE Computer Society, Washington, DC, 486-494.

Awards

→ 2009 Google Anita Borg Scholar
→ School of Computing and Informatics Class of 2009 Distinguished Senior in Computer Science
→ School of Computing and Informatics Class of 2009 Distinguished Senior in Computer Science
→ 2009 Computing Research Association's Outstanding Undergraduate Award Honorable Mention
→ 2008-2009 Helen K. and Stanley C. Delpier Scholarship
→ 2005 National Merit Finalist Scholarship, renewed through Spring 2009

Activities

MIT: Co-founder of Media Lab Crafternoon, MIT ESL for Service Employees volunteer, competed with team in TEI 2011 Design Challenge (Design a Superhero).
ASU: Raised funds and organized events for ASU Linux User Group, tutored at-risk children through hands-on learning in ASU Service Learning Internship program, outreach through engineering project demonstrations at ASU 2007 and 2008 Sally Ride Science Festival, designed class activities as a teacher's aide in French at the New School for the Arts in Tempe, AZ.