

Jeffrey Nichols

Curriculum Vitae

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- Research Interests** Human-computer interaction, mobile and ubiquitous computing, end-user programming, social software, intelligent user interfaces, and mobile interaction design.
- Education**
- Ph.D. in Human-Computer Interaction
Carnegie Mellon University
December 2006
 - B.S. Cum Laude in Computer Engineering
University of Washington
April 2000
- Experience**
- Research Staff Member, IBM Almaden Research Center
December 2006-present
Working on a variety of projects investigating mobile interaction, end-user programming, social software, and multi-device interaction technologies. Main research projects: Highlight, PlayByPlay, CoScripter, and Personal Information Environments (PIE).
 - Graduate Student/Research Assistant, Carnegie Mellon University
August 2000-December 2006
Worked on the Pebbles and Personal Universal Controller research projects.
Advisor: Brad A. Myers.
 - Research Intern, Intel Research Seattle
September 2003-January 2004
Worked with the Personal Server research team to integrate my automatic interface generation research with the Personal Server.
 - Research Assistant, University of Washington
September 1998-March 2000
Implemented a user interface for the window constraints in the Scheme Constraints Window Manager (SCWM) under the advisement of Professor Alan Borning. Assisted in the design, testing, and layout of a low-power, mixed-signal linear coallator under the advisement of Associate Professor Chris Diorio.
 - Honors Intern, Intel Corp.
Summers of 1996-2000
Worked on a wide variety of projects, from designing applications and user interfaces for use by workers in fabs to testing designs for unreleased microprocessors.

Teaching

Teaching

CS 160: User Interface Design, Prototyping, and Evaluation
University of California, Berkeley - Spring 2009
Co-taught with Associate Professor Maneesh Agrawala

Teaching Assistantships

05-630: Programming User Interfaces
Carnegie Mellon University - Spring 2003
Gave lectures, led in-class critiques of student interfaces, and graded assignments.

05-631: User Interface Software
Carnegie Mellon University - Fall 2002
In charge of assignments, including authoring and grading. Gave lectures on Java programming, interaction techniques, and constraints.

CSE 468: Very Large Scale Integration (VLSI)
University of Washington - Winter 2000
Assisted with creation of assignments and grading. Managed lab space and assisted students with CAD tools.

CSE 477: Embedded Systems Design
University of Washington - Fall 1999
Ported all lab assignments to a new hardware platform (Intel StrongARM) and assisted with authoring the midterm and grading.

Guest Lectures

CS 160: User Interface Design, Prototyping, and Evaluation
University of California, Berkeley - Fall 2007
Title: "Event-based UI Programming, Model-View-Controller, and the Web"

05-830: Advanced User Interface Software
Carnegie Mellon University - Spring 2003 and Fall 2004
Title: "New Model-Based Approaches"

Honors

NSF Graduate Fellowship Recipient, 2000-2003
Intel Honors Intern Program, *June 1996-August 2000*
Eagle Scout, *May 1996*

Publications

Journal Papers

- [J.1] Jeffrey Nichols and Brad A. Myers. "Creating a Lightweight User Interface Description Language: An Overview and Analysis of the Personal Universal Controller Project," To appear in *ACM Transactions on Computer-Human Interaction*.
- [J.2] Jeffrey Nichols and Brad A. Myers. "Controlling Home and Office Appliances Using Smartphones," *IEEE Pervasive Computing*. Vol. 5, No. 3, July-Sept 2006, pp. 60-67
- [J.3] Brad A. Myers, Jeffrey Nichols, Jacob O. Wobbrock, Robert C. Miller. "Taking Handheld Devices to the Next Level." *IEEE Computer*. December 2004. pp 40-47.

Conference Papers

- [C.1] Jeffrey P. Bigham, Ryan Kaminsky, Jeffrey Nichols. "Mining Web Interactions to Automatically Create Mash-Ups," To appear in *Proceedings of UIST 2009*. Victoria, British Columbia, Canada. October 4-7.
- [C.2] Tessa Lau, Clemens Drews, Jeffrey Nichols. "Interpreting Hand-Written How-To Documentation," In *Proceedings of IJCAI 2009*. Pasadena, CA. July 11-17. pp. 1433-1438
- [C.3] Heather Wiltse, Jeffrey Nichols. "PlayByPlay: Collaborative Web Browsing for Desktop and Mobile Devices," In *Proceedings of CHI 2009*. Boston, MA. April 4-9. pp. 1781-1790.
- [C.4] James Lin, Jeffrey Wong, Allen Cypher, Jeffrey Nichols, Tessa Lau. "End-User Programming of Mashups with Vegemite," In *Proceedings of IUI 2009*. Sanibel Island, FL. February 8-11. pp. 97-106.
- [C.5] Jeffrey P. Bigham, Tessa Lau, Jeffrey Nichols. "TrailBlazer: Enabling Blind Users to Blaze Trails Through the Web," In *Proceedings of IUI 2009*. Sanibel Island, FL. February 8-11. pp. 177-186.
- [C.6] Jeffrey Nichols, Zhigang Hua, John Barton. "Highlight: A System for Creating and Deploying Mobile Web Applications," in *Proceedings of UIST'2008*. Monterey, CA. October 19-22. pp. 249-258.
- [C.7] Jeffrey S. Pierce, Jeffrey Nichols. "An Infrastructure for Building Applications That Span Multiple Personal Devices," in *Proceedings of UIST'2008*. Monterey, CA. October 19-22. pp. 101-110.
- [C.8] Jeffrey Nichols, Tessa Lau. "Mobilization by Demonstration: Using Traces to Re-author Existing Web Sites," In *Proceedings of IUI'2008*. Maspalomas, Gran Canaria, Spain. January 13-16.
- [C.9] Jeffrey Nichols, Duen Horng Chau, Brad A. Myers. "Demonstrating the Viability of Automatically Generated User Interfaces," In *Proceedings of CHI'2007*. San Jose, CA. April 28-May 3. pp. 1283-1292
- [C.10] Jeffrey Nichols, Brandon Rothrock, Duen Horng Chau, Brad A. Myers. "Huddle: Automatically Generating Interfaces for Systems of Connected Appliances," In *Proceedings of UIST'2006*. October 15-18. Montreux, Switzerland. pp. 279-288
- [C.11] Jeffrey Nichols, Brad A. Myers, Brandon Rothrock. "UNIFORM: Automatically Generating Consistent Remote Control User Interfaces," In *Proceedings of CHI'2006*. April 22-27. Montreal, Canada. pp. 611-620
- [C.12] Jeffrey Nichols, Brad A. Myers, and Kevin Litwack. "Improving Automatic Interface Generation with Smart Templates," In *Proceedings of Intelligent User Interfaces (IUI) 2004*. Funchal, Portugal. January 13-16. pp. 286-288
- [C.13] Jeffrey Nichols and Brad A. Myers. "Studying The Use Of Handhelds to Control Smart Appliances," In *Proceedings of the 23rd International Conference on Distributed Computing Systems Workshops (ICDCS '03)*. Providence, RI. May 19-22, 2003. pp. 274-279
- [C.14] Jeffrey Nichols, Brad A. Myers, Michael Higgins, Joseph Hughes, Thomas K. Harris, Roni Rosenfeld, Kevin Litwack. "Personal Universal Controllers: Controlling Complex Appliances With GUIs and Speech," In *Extended Abstracts of CHI'2003*, April 5-10. Ft. Lauderdale, FL. pp. 624-625

- [C.15] Brad A. Myers, Jeffrey Nichols, Jacob O. Wobbrock, Kevin Litwack, Michael Higgins, Joseph Hughes, Thomas K. Harris, Roni Rosenfeld, Mathilde Pignol. "Handheld Devices for Control," in *Human-Computer Interaction Consortium (HCIC'2003)*, Winter Park, CO, Feb 5-9, 2003.
- [C.16] Jeffrey Nichols, Brad A. Myers, Michael Higgins, Joseph Hughes, Thomas K. Harris, Roni Rosenfeld, Mathilde Pignol. "Generating Remote Control Interfaces for Complex Appliances," In *Proceedings of UIST'2002*, Paris, France. Oct 27-30. pp. 161-170
- [C.17] Jeffrey Nichols, Brad Myers, Thomas K. Harris, Roni Rosenfeld, Stefanie Shriver, Michael Higgins, Joseph Hughes. "Requirements for Automatically Generating Multi-Modal Interfaces for Complex Appliances," In *Proceedings of the Fourth IEEE International Conference on Multimodal Interfaces*, October 14-16, 2002. Pittsburgh, PA. pp. 377-382
- [C.18] Brad Myers, Robert Malkin, Michael Bett, Alex Waibel, Ben Bostwick, Robert C. Miller, Jie Yang, Matthias Denecke, Edgar Seemann, Jie Zhu, Choon Hong Peck, Dave Kong, Jeffrey Nichols, Bill Scherlis. "Flexi-modal and Multi-Machine User Interfaces," In *Proceedings of the Fourth IEEE International Conference on Multimodal Interfaces*, October 14-16, 2002. Pittsburgh, PA. pp. 343-348
- [C.19] Jeffrey Nichols, Jacob O. Wobbrock, Darren Gergle, and Jodi Forlizzi. "Mediator and Medium: Doors as Interruption Gateways and Aesthetic Displays" In *Proceedings of DIS'2002*, London, UK. June 25-28. pgs 379-386.
- [C.20] Brad A. Myers, Jacob O. Wobbrock, Sunny Yang, Brian Yeung, Jeffrey Nichols, and Robert Miller. "Using Handhelds to Help People with Motor Impairments". In *Proceedings of the ACM SIGCAPH's 5th International Conference on Assistive Technologies (ASSETS '02)*, Edinburgh, Scotland, July 8-10 2002. pp. 89-96
- [C.21] Brad A. Myers, Rishi Bhatnagar, Jeffrey Nichols, Choon Hong Peck, Dave Kong, Robert Miller, and A. Chris Long. "Interacting At a Distance: Measuring the Performance of Laser Pointers and Other Devices". In *Proceedings of CHI'2002*. Minneapolis, MN. April 20-25 pp. 33-40
- [C.22] Brad A. Myers, Choon Hong Peck, Jeffrey Nichols, Dave Kong, and Robert Miller. "Interacting At a Distance Using Semantic Snarfing," In *Proceedings of UbiComp 2001*. Sept 30-Oct 2, Atlanta, Georgia. pp. 305-314.
- [C.23] Greg J. Badros, Jeffrey Nichols, and Alan Borning. "Scwm: An Extensible Constraint-Enabled Window Manager", In *Proceedings of Freenix track of USENIX Technical Conference*. Boston, June 2001.
- [C.24] Greg Badros, Jeffrey Nichols and Alan Borning, "Scwm--An Intelligent Constraint-Enabled Window Manager", *AAAI Spring Symposium on Smart Graphics*, March 2000

Workshop Papers

- [W.1] Allen Cypher, Tessa Lau, Jeffrey Nichols, Mira Dontcheva. "Workshop on End User Programming for the Web," in *Extended Proceedings of CHI'2009*. April 4-9. Boston, MA. pp. 4779-4782.
- [W.2] Kai Richter, Jeffrey Nichols, Krzysztof Gajos, Ahmed Seffah. "The Many Faces of Consistency in Cross-Platform Design" in *Extended Proceedings of CHI'2006*. April 22-23. Montreal, Canada. pp. 1639-1642

- [W.3] Jeffrey Nichols and Andrew Faulring. "Automatic Interface Generation and Future User Interface Tools", In *Proceedings of the Workshop on the Future of User Interface Design Tools at CHI 2005*. April 4. Portland, OR.
- [W.4] Jeffrey Nichols and Brad A. Myers. "Generating Consistent User Interfaces for Appliances", In *Proceedings of the Workshop on Multi-User and Ubiquitous User Interfaces at Intelligent User Interfaces 2005*. January 9. San Diego, CA. pp. 9-10
- [W.5] Jeffrey Nichols, Brad A. Myers, Kevin Litwack, Michael Higgins, Joseph Hughes, Thomas K. Harris. "Describing Appliance User Interfaces Abstractly with XML," In *Workshop on Developing User Interfaces with XML: Advances on User Interface Description Languages, 2004*, 25 May, Gallipoli, Italy. pp. 9-16
- [W.6] Jeffrey Nichols, Brad A. Myers, and Rob Miller. "Personal Interfaces in Ubiquitous Environments," in *Proceedings of the CHI'2001 Workshop on Building the Ubiquitous Computing Experience*. Seattle, WA.

Doctoral Consortiums

- [DC.1] Jeffrey Nichols. "Automatically Generating User Interfaces for Appliances", In *UIST 2004 Conference Companion*, October 24-27, 2004. Santa Fe, NM. pp 71-74
- [DC.2] Jeffrey Nichols. "Automatically Generating User Interfaces for Appliances," in *Advances of Pervasive Computing* edited by Alois Ferscha, Horst Hortner, and Gabriele Kotsis. April 18, 2004. pp. 105-110.

Technical Reports

- [T.1] Brad A. Myers, Jeff Nichols, Rob Miller. "User Interfaces that Span Hand-Held and Fixed Devices" *Workshop on Distributed and Disappearing User Interfaces in Ubiquitous Computing at CHI'2001*, Seattle, WA. Albrecht Schmidt, Peter Ljungstrand, and Anind Dey, editors. University of Karlsruhe Faculty of Information Technical Report 2001-6. ISSN 1432-7864.

Student Posters

- [P.1] Jeffrey Nichols. "Informing Automatic Generation of Remote Control Interfaces with Human Designs," In *Extended Proceedings of CHI'2002*. Minneapolis, MN. April 20-25 pp. 864-865
- [P.2] Jeffrey Nichols. "Using Handhelds as Controls for Everyday Appliances: A Paper Prototype Study," *ACM CHI'2001 Student Posters*. Seattle, WA. March 31-April 5, 2001. pp 443-444.

Invited Talks

Highlight: Mobilizing Existing Web Sites
 IBM India Research Lab, New Delhi, India
 July 8, 2009

Highlight: Mobilizing Existing Web Sites
 PARC, Palo Alto, CA
 February 5, 2009

Highlight: Mobilizing Existing Web Sites
 UC Berkeley, Berkeley Institute of Design Seminar, Palo Alto, CA
 December 2, 2008

Highlight: Mobilizing Existing Web Sites
 Nokia Palo Alto Research Lab, Palo Alto, CA
 June 3, 2008

Huddle and Information Triggers: Helping Users Automate Complex and Temporally-Distant Tasks

UC Berkeley, Berkeley Institute of Design Seminar. Berkeley, CA.
June 14, 2007

Automatically Generating High Quality User Interfaces

Motorola Human Interaction Research (HIR), Schaumburg, IL.
February 24, 2006

The Personal Universal Controller and .NET CF

Microsoft Faculty Summit, Redmond, WA.
July 2003

Research Grants

Co-Authored (not PI)

- NSF. IIS-0534349. "Automatically Generating Consistent User Interfaces for Multiple Appliances." *Dec 2005-Nov 2008*. \$412,000.
- General Motors. "Using Handheld Devices for Information and Control in Vehicles." *2005*: \$83,678. *2004*: \$83,678. *2003*: \$83,678.
- Microsoft Research, Support for the Pebbles Project. *2004*: \$4,098 equipment; *2003*: \$8,514.12 equipment; *2002*: \$80,000 cash.
- Lutron, Inc. "Remote Control of UPnP Devices". *2003*. \$2000.
- Lantronix, Inc. "Remote Control of UPnP Devices". *2003*. \$1144.
- Mitsubishi Electric Research Laboratory. "Remote Control of HAVi Appliances in Pebbles." Mitsubishi WS-65909 65" Integrated HDTV Diamond Series television and Mitsubishi HS-HD2000U High Definition Digital VCR. *2002*. \$6,500 plus \$1,500 for VividLogic HAVi toolkit.
- NSF. IIS-0223945. "Research Experiences for Undergraduates (REU) Supplement to IIS-0117658: Making it Easier to Interact with Technology Through Handheld Personal Universal Controllers." *Summer, 2002*. \$6000.
- NSF. IIS-0117658. "Making it Easier to Interact with Technology Through Handheld Personal Universal Controllers." *2001-2004*. \$505,867.

Professional Activities

Chair

- Information Director, ACM Transactions on Human-Computer Interaction, *2010*
- Program Co-Chair, EICS Conference, *2010*
- Madness Co-Chair, CHI Conference, *2008-2009*
- Co-Organizer, Workshop on "End-User Programming for the Web" at CHI Conference, *April 4, 2009*
- Proceedings Co-Chair, UIST Conference, *2007-2008*
- Co-Organizer, Workshop on "The Many Faces of Consistency in Cross-Platform Design" at CHI Conference, *April 22-23, 2006*

Program Committees

- World-Wide Web Conference, User Interface/Rich Interaction Track, *2010*
- Intelligent User Interfaces (IUI) Conference, *2007-2008, 2010*
- Senior Program Committee, Intelligent User Interfaces (IUI) Conference, *2009*
- Computer-Human Interaction (CHI), *2008*
- Computer-Aided Design of User Interfaces, *2008*
- International Journal of Web Engineering and Technology (IJWET), Special Issue on User Interface Description Languages, *2006*

- User Interface Software & Technology (UIST) Posters, 2006
- User Interface Software & Technology (UIST) Demos, 2004

Reviewer

- HCI Journal, 2009
- CHI Conference (Full Papers, Tech Notes, & Late Breaking Results), 2002-2009
- UIST Conference (Full Papers, Demonstrations, Posters), 2002-2009
- CSCW Conference (Full Papers, Tech Notes), 2008-2009
- Ubicomp Conference (Full Papers, Posters), 2005-2009
- Interacting with Computers Journal, 2004, 2006, 2008-2009
- EICS Conference (Full Papers & Late Breaking Results), 2009
- Pervasive Conference (Full Papers & Late Breaking Results), 2007
- IEEE Transactions on Multimedia, 2007
- Computers & Graphics Journal, 2005
- IEE Proceedings Software, 2005
- IEEE Pervasive Computing, 2004
- MobiSys Conference, 2004

Other Service

- New Paradigms in Using Computers (NPUC) Poster Coordinator, 2007-2008
- CMU HCII Ph.D. Ombudsperson, 2003-2006
Elected by fellow students. Consisted of traditional ombudsperson duties, plus representing the Ph.D. students as a whole to the faculty. This included managing two moves to new office spaces, working with faculty to clarify and improve our speaking requirement, and presenting student criticisms of department courses to the faculty.