Shaun K. Kane

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Education

University of Washington, Seattle, WA (2005–)
Ph.D. Candidate in Information Science. Advisor: Jacob O. Wobbrock.

University of Massachusetts, Amherst, MA (2003–2005)
M.S. in Computer Science. Concentration in Artificial Intelligence. Advisor: Robert Moll.

University of Massachusetts, Amherst, MA (1999–2003)
B.S. in Computer Science. Departmental honors, summa cum laude.

Research Interests

Human computer interaction (HCI), specifically accessible user interfaces for people with disabilities, mobile device interaction techniques, and adaptive user interfaces.

Publications

Refereed Conference Papers (Full)

Kane, S.K., Jayant, C., Wobbrock, J.O. and Ladner, R.E. (2009). Freedom to roam: A study of mobile device adoption and accessibility for people with visual and motor disabilities. *Proceedings of the ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '09).* New York: ACM Press, 115-122.

Kane, S.K., Avrahami, D., Wobbrock, J.O., Harrison, B., Rea, A.D., Philipose, M. and LaMarca, A. (2009). Bonfire: A nomadic system for hybrid laptop-tabletop interaction. *Proceedings of the ACM Symposium on User Interface Software and Technology (UIST '09).* New York: ACM Press, 129-138.

Kane, S.K., Karlson, A.K., Meyers, B.R., Johns, P., Jacobs, A. and Smith, G. (2009). Exploring cross-device web use on PCs and mobile devices. *Proceedings of the Twelfth IFIP Conference on Human-Computer Interaction (INTERACT '09).* Berlin: Springer, 722-735.

Kane, S.K., Bigham, J.P. and Wobbrock, J.O. (2008). Slide Rule: Making mobile touch screens accessible to blind people using multi-touch interaction techniques. *Proceedings of the ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '08)*. New York: ACM Press, 73-80.

Kane, S.K., Wobbrock, J.O. and Smith, I.E. (2008). Getting off the treadmill: Evaluating walking user interfaces for mobile devices in public spaces. *Proceedings of MobileHCI '08.* New York: ACM Press. **Winner of Best Paper Award.**

Kahn, P.H., Jr., Freier, N.G., Kanda, T., Ishiguro, H., Ruckert, J.H., Severson, R.L. and **Kane, S.K.** (2008). Design patterns for sociality in human-robot interaction. *Proceedings of the 3rd ACM/IEEE International Conference on Human Robot Interaction (HRI '08).* New York: ACM Press, 97-104.

Nathan, L.P., Friedman, B., Klasnja, P., **Kane, S.K.** and Miller, J.K. (2008). Envisioning systemic effects on persons and society throughout interactive system design. *Proceedings of the Designing Interactive Systems Conference (DIS '08).* Cape Town, South Africa. New York: ACM Press.

Froehlich, J., Wobbrock, J.O. and **Kane, S.K.** (2007). Barrier Pointing: Using physical edges to assist target acquisition on mobile device touch screens. *Proceedings of the ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '07).* Tempe, Arizona. New York: ACM Press.

Kane, S.K., Shulman, J.A., Shockley, T.J. and Ladner, R. E. (2007). A web accessibility report card for top university web sites. *Proceedings of the International Cross-Disciplinary Conference on Web Accessibility (W4A '07).* Banff, Canada. New York: ACM Press.

Refereed Conference Papers (Short)

Kane, S.K. and Klasnja, P.V. (2009). Supporting volunteer activities with mobile social software. *Proceedings of the 27th International Conference on Human Factors in Computing Systems (CHI '09 Extended Abstracts).* New York: ACM Press, 4567-4572.

Cheung, G.C., Chilana, P.K., **Kane, S.K.** and Pellett, B. (2009). Designing for discovery: Opening the hood for open-source end user tinkering. *Proceedings of the 27th International Conference on Human Factors in Computing Systems (CHI '09 Extended Abstracts).* New York: ACM Press. 4321-4326.

Karlson, A.K., Meyers, B.R., Jacobs, A., Johns, P. and **Kane, S.K.** (2009). Working overtime: Patterns of smartphone and PC usage in the day of an information worker. *Proceedings of the Seventh International Conference on Pervasive Computing (Pervasive '09)*. Berlin: Springer, 398-405.

Kane, S.K., Wobbrock, J.O., Harniss, M. and Johnson, K.L. (2008). TrueKeys: Identifying and correcting typing errors for people with motor impairments. *Proceedings of the Intelligent User Interfaces Conference (IUI '08).* New York: ACM Press.

Journal Articles

Kane, S.K. (2007). Everyday inclusive web design: an activity perspective. *Information Research*, 12 (1).

Kane, S.K. (2009). Context-enhanced interaction techniques for more accessible mobile phones. *SIGACCESS Newsletter.* New York: ACM Press.

Book Chapters

Kane, S.K., Hannah, J., Edwards, P.M., and Dorman, J. (2007). Teaching in computer classrooms. In C. Ross and J. Dunphy (Eds.), *Strategies for Teaching Assistant and International Teaching Assistant Development: Beyond Micro Teaching.* Bolton, MA: Anker.

Posters

Kane, S.K. (2009). Improving mobile phone accessibility with adaptive user interfaces. Presented at iConference 2009. **Winner of Best Poster Award.**

Kane, S.K. (2008). Context-enhanced interaction techniques for more accessible mobile phones. Presented at the ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '08). Halifax, Nova Scotia. New York: ACM Press.

Kane, S.K. and Wobbrock, J.O. (2007). Automatically correcting typing errors for people with motor impairments. *Companion to the ACM Symposium on User Interface Software and Technology (UIST '07).* Newport, Rhode Island. New York: ACM Press.

Kane, S.K. (2007). Engaging student web programmers as inclusive designers. Presented at the 12th Annual Conference on Innovation and Technology in Computer Science Education (ITICSE '07). Dundee, Scotland, UK. **Winner of Outstanding Poster Award.**

Kane, S.K., Lehman, A. and Partridge, E. (2002). Indexing George Washington's handwritten manuscripts: A study of word matching techniques. Presented at ACM SIGCSE '02 Undergraduate Research Competition. Cincinnati, Ohio.

Invited Presentations

Kane, S.K. (2009). Supporting independent navigation using commodity mobile phones. Technology and Disability in the Developing World conference, Uiversity of Washington. October 2, 2009.

Kane, S.K. and Eisenberg, M.B. (2007). New tools for web credibility. Presented at Microsoft Research. January 12, 2007.

Interviewed on *The Talk Show,* Evergreen Radio Reading Service. January 28, 2009. With Jeffrey P. Bigham and Kristen Shinohara.

Unpublished Papers and Technical Reports

Kane, S.K. (2005). Sketch-based input and evaluation in an online web-based learning environment. Unpublished master's thesis, University of Massachusetts.

Kane, S.K. (2003). Developing modular multi-user environments with Carnival. Unpublished undergraduate thesis, University of Massachusetts.

Rath, T.M., **Kane, S.K.**, Lehman, A., Partridge, E. and Manmatha, R. (2002). Indexing for a digital library of George Washington's manuscripts: A study of word matching techniques. CIIR technical report, University of Massachusetts.

Kane, S.K., Lehman, A. and Partridge, E. (2001). Indexing George Washington's handwritten manuscripts. CIIR technical report, University of Massachusetts.

Popular Press

1. Nick Eaton. "Tabletop UI, wireless power and more from Intel Labs Seattle." Seattle Post-Intelligencer Blogs. September 30, 2009.
2. Gregory T. Huang. "Intel Labs Seattle Shows Off New Sensing Interfaces, Self-Charging Robot, Wireless Power." Xconomy. September 29, 2009.
3. Brier Dudley. "Intel robot's new trick, wireless music and other research goodies." Seattle Times Blogs. September 28, 2009.
4. Staff. "Kane, Wobbrock win Best Paper at ACM MobileHCI 2008 conference." Information School News. September 10, 2008.

Honors and Awards

Honorable Mention: NISH National Scholar Award for Workplace Innovation and Design (2009)
Received honorable mention for the NISH National Scholar Award for the submission *Fully Accessible Touch Screens for the Blind and Visually Impaired.*

Best Poster Award: iConference (2009)
Received Best Poster Award at iConference 2009 for the poster *Improving Mobile Phone Accessibility with Adaptive User Interfaces.*

Most Innovative Award: UW Science and Engineering Business Association (2008)
Received Most Innovative Award at UW Science and Engineering Business Association Science and Technology Showcase for the poster *Slide Rule: Eyes-Free Mobile Phone Applications for Everyone.*

Best Paper Award: MobileHCI Conference (2008)
Received Best Paper Award at MobileHCI 2008 conference for the paper *Getting off the Treadmill: Evaluating Walking User Interfaces for Mobile Devices in Public Spaces.*

Outstanding Poster Award: ITICSE Conference (2007)
Received Outstanding Poster Award at ITICSE 2007 conference for the poster *Engaging Student Web Programmers as Inclusive Designers.*

Graduate Student Top Scholar Award, University of Washington (2005–2006)
$5,000 award presented by the University of Washington Graduate School.

Bay State Fellowship, University of Massachusetts (2003–2005)
Tuition waiver and assistantship presented by the Department of Computer Science at the University of Massachusetts in recognition of undergraduate academic achievement.

ACM SIGCSE Undergraduate Student Research Competition (2002)
$200 prize awarded to S. Kane, A. Lehman, E. Partridge and R. Manmatha for the poster *Indexing George Washington's Handwritten Manuscripts: A Study of Word Matching Techniques.* 3rd place.

National Science Foundation Research Experience for Undergraduates Fellowship (2001)
NSF REU research with R. Manmatha and James Allan at the Center for Intelligent Information Retrieval at the University of Massachusetts.

Commonwealth College Scholar, University of Massachusetts (1999–2003)
Honors scholar at the University of Massachusetts.

Computer Science Talent Advancement Program, University of Massachusetts (1999–2000)
Merit-based residence program for computer science undergraduates at the University of Massachusetts.

Research Experience

AIM Research Group, University of Washington (2007–)
With Jacob O. Wobbrock. Create, develop, and evaluate accessible user interfaces for PCs and mobile devices, as well as new interaction techniques for mobile devices.

Intel Research Seattle (2007–2009)
With Beverly Harrison, Daniel Avrahami, Ian E. Smith, and Ali Rahimi. Developed and evaluated adaptive user interfaces for mobile devices and laptop PCs.

Everyday Technology Group, Microsoft Research (2008)
With Amy K. Karlson. Conducted a field study that examined the web browsing habits of mobile information workers across multiple PCs and smartphones. Developed prototype software to share web browsing history across devices.

Center for Technology and Disability Studies, University of Washington (2007–2008)
With Mark Harniss and Kurt L. Johnson. Conducted a systematic literature review of cognitive support technology research.

Value Sensitive Design Lab, University of Washington (2006–)
With Batya Friedman and Peter Kahn. Developed new research methods and techniques for including human value concerns in the design process of new technologies.

Credibility Commons, University of Washington (2006–2007)
With Michael Eisenberg and R. David Lankes. Managed an interdisciplinary research project to increase access to trustworthy information on the web. Developed prototypes for new web search tools, and conducted a user study of health information search behavior.

Center for Educational Software Development, University of Massachusetts (2003–2005)
With Robert Moll and Beverly Park Woolf. Designed and developed educational research software including a handwriting-based programming editor, and an online instructioinal tool for using spreadsheets.

Center for Intelligent Information Retrieval, University of Massachusetts (2001)
With R. Manmatha. Implemented image matching algorithms to compare scanned images of handwritten documents. Performed an empirical evaluation of several matching algorithms. Created visualizations to demonstrate the effectiveness of matching algorithms.

Industry Experience

Interaction designer (intern), Filament Group, Boston, MA (2004)
Designed user interface prototypes for web and mobile applications. Presented design documents to clients. Developed application tools to assist designers in prototyping. Designed and implemented a best practices guide for designing web-based applications.

Software design engineer in test (intern), Microsoft Corporation, Redmond, WA (2002)
Developed software components for a web-based test monitor. Served as primary tester for a workflow management application. Created and managed a test plan and developed automated testing libraries.

Teaching Experience

Instructor

Informatics 344: Web Tools and Development, UW (2006)
Instructor for an undergraduate course in web programming. Course topics included programming with PHP, databases, web application design, web usability, and accessibility.

Computer Science 121: Introduction to Problem Solving with Computers, UMass (2005)
Instructor for an undergraduate programming course using Java. Course topics included programming with Java, object-oriented design, software testing, and debugging.

Teaching Assistant

Information Management 540: HCI Design Foundations for Interactive Systems, UW (2009)
With Jacob O. Wobbrock. Course topics included design methods, iterative prototyping, and usability evaluation. Evaluated student assignments and advised students with group design projects.

Informatics 445: Advanced Database Design, Management, and Maintenance, UW (2009)
With David G. Hendry. Course topics included advanced database modeling, database normalization, and database server maintenance. Evaluated student assignments, assisted students with hands-on assignments, and provided guidance for group projects.

Informatics 344: Databases and Information Retrieval, UW (2006)
With David G. Hendry. Course topics included database design, SQL programming, and information retrieval systems. Created and evaluated student assignments, presented lectures, maintained course web site, and facilitated group lab sessions.

Informatics 100: Fluency with Information Technology, UW (2006)
With Lawrence Snyder and Douglas Johnson. Course topics included web page design and programming, image editing, spreadsheets, and databases. Created and evaluated student assignments, developed lecture material, and facilitated group lab sessions.

Computer Science 391S: Fundamentals of Graphic Communication, UMass (2004)
With Beverly Park Woolf. Course topics included graphic design, character animation, video editing, and interaction design, Developed curriculum materials, created and evaluated student assignments, presented lectures, facilitated group lab sessions.

Workshop Facilitator

TA Conference on Teaching and Learning, UW (2006–2007)
Facilitated workshops at annual TA training conference. Facilitated the workshops *Teaching in Computer Lab Settings* and *Disability as Diversity in the Classroom.* Served as joint facilitator for *Who We Are Matters: A Conversation with Experienced Minority TAs.*

Service and Leadership

AccessComputing Alliance for Access to Computing Careers (2008–)
Student representative for project to increase representation by people with disabilities in computing fields. Participated in forums and recruitment events for high school students with disabilities.

PhD Representative, iSchool Diversity Committee, University of Washington (2005–2007)
Planned and facilitated social events and research colloquia related to diversity issues at the University of Washington Information School.

Talent Advancement Program Ambassador, University of Massachusetts (2000)
Recruited and advised applicants to the Department of Computer Science at the University of Massachusetts.