Julia Schwarz

julia.schwarz@cs.cmu.edu
http://www.juliaschwarz.net

EDUCATION

Ph.D., Human Computer Interaction (Expected graduation: December 2014) 2009-2014
School of Computer Science, Carnegie Mellon University, Pittsburgh, PA
Advised by Scott Hudson and Jennifer Mankoff

M.S., Human Computer Interaction 2009-2012
School of Computer Science, Carnegie Mellon University, Pittsburgh, PA

B.S., Computer Science with College Honors, *summa cum laude* 2004-2008
University of Washington, Seattle, WA. GPA 3.97/4.0

PROFESSIONAL EXPERIENCE

Qeexo *Co-Founder, Director of Research* 2013 - Present
- Co-Inventor and technical lead of FingerSense project.
- Grew R&D team from 2 to 6 full time employees (recruiting & onboarding).
- Developed 90% of tools and demo applications (Windows/iOS/Android).
- Shipped FingerSense prototypes on ~ 10 different device models for ~6 customers.
- Developed new palm rejection algorithm. Publication CHI 2014.
- Built prototype to reconstruct the 3D finger pose on unmodified Android device.

Microsoft, Xbox NUI Team *Associate Researcher 2* 2012-2013
- Developed prototypes for gestural input techniques used in Kinect for Xbox One.
- Developed & evaluated technology behind new interaction technique for Xbox One that replaced 'wave to engage' gesture on Xbox One. Publication CHI 2014.

Microsoft Research *Research Intern, Software Design Engineer* 2010-2012
Three research internships.
- Built a probabilistic input toolkit for the Kinect. Ran a user study to compare probabilistic and rules-based toolkit. Toolkit is published internally at Microsoft, fourth most popular Kinect tool within Microsoft.
- Developed, evaluated visualization to help people assess credibility on web. Publication CHI 2011.

Google *Software Engineering Intern* 2007 - 2009
Three academic internships over the course of 2 years.
- Developed live update pipeline as well as analysis tools for large data source.
- Built prototypes of next-gen search engine; built rapid prototyping framework.
- Designed, implemented a web API; developed an interactive JavaScript UI.

PUBLICATIONS

Chen, X., **Schwarz, J.**, Harrison, C., Mankoff, J., Hudson, S. Air + Touch: Interweaving Touch & In-Air Gestures. *To Appear in Proceedings of 27th Annual Conference on User Interfaces and Technology* (Honolulu, Hawaii, October 6 – 9, 2014). UIST '14. ACM, New York, NY.

Chen, X., **Schwarz, J.,** Harrison, C., Mankoff, J., Hudson, S. Around-Body Interaction: Sensing & Interaction Techniques for Proprioception-Enhanced Input with Mobile Devices. *In Proceedings of the 16th Annual International Conference on Human-Computer Interaction With Mobile Devices and Services* (Toronto, Canada, September 24 – 26, 2014). MobileHCI '14. AMC, New York, NY.

Schwarz, J., Xiao, R., Mankoff, J., Hudson, S., Harrison, C. Probabilistic Palm Rejection Using

Spatiotemporal Touch Features and Iterative Classification. *In Proceedings of the 32nd Annual SIGCHI Conference on Human Factors in Computing Systems* (Toronto, Canada, April 26 - May 1, 2014). CHI '14. ACM, New York, NY.

Schwarz, J., Marais, C., Leyvand, T., Hudson, S., Mankoff, J. Combining Body Pose, Gaze and Motion to Determine Intention to Interact in Vision-Based Interfaces. *In Proceedings of the 32nd Annual SIGCHI Conference on Human Factors in Computing Systems* (Toronto, Canada, April 26 - May 1, 2014). CHI '14. ACM, New York, NY.

Harrison, C., Xiao, R., **Schwarz, J.**, and Hudson, S. TouchTools: Leveraging Familiarity and Skill with Physical Tools to Augment Touch Interaction. *In Proceedings of the 32nd Annual SIGCHI Conference on Human Factors in Computing Systems* (Toronto, Canada, April 26 - May 1, 2014). CHI '14. ACM, New York, NY.

Schwarz, J., Klionsky, D., Harrison, C., Dietz, P., and Wilson, A. Phone as a Pixel: Enabling Large-Scale Displays Using Mobile Devices. *In Proceedings of 30th Annual SIGCHI Conference on Human Factors in Computing Systems* (Austin, Texas, May 5-10, 2012). CHI'12. ACM, New York, NY 1245-1254.

Morris, M.R., Counts, S., Roseway, A., Hoff, A., and **Schwarz, J.** Tweeting is Believing? Understanding Microblog Credibility Perceptions. *In Proceedings of of the 15th Annual ACM Symposium on Computer Suported Cooperative Work* (Seattle, Washington, Febuary 12 – 15, 2012). CSCW '12. ACM, New York, NY.

Schwarz, J., Mankoff, J., Hudson, S., Monte Carlo Methods for Managing Interactive State, Action and Feedback Under Uncertainty. *In Proceedings of 24th Annual ACM Symposium on User Interface Software and Technology* (Santa Barbara, California, October 16-19, 2011). UIST '11. ACM, New York, NY, 235 - 244.

Harrison, C., **Schwarz, J.** TapSense: Enhancing Finger Interaction on Touch Surfaces. *In Proceedings of 24th Annual ACM Symposium on User Interface Software and Technology* (Santa Barbara, California, October 16-19, 2011). UIST '11. ACM, New York, NY, 627 - 636.

Schwarz, J., Ringel Morris, M., Augmenting Web Pages and Search Results to Support Credibility Assessment. *In Proceedings of the 29th Annual SIGCHI Conference on Human Factors in Computing Systems* (Vancouver, Canada, May 7 – 12, 2011). CHI '11. ACM, New York, NY, 1245 – 1254.

Schwarz, J., Hudson, S., Mankoff, J., A Robust and Flexible Framework for Handling Inputs with Uncertainty. *In Proceedings of the 23rd Annual ACM Symposium on User Interface Software and Technology* (New York, New York, October 3 – 6, 2010). UIST'10. ACM, New York, NY, 47 - 56.

Schwarz, J., Harrison, C., Hudson, S., and Mankoff, J. Cord Input: An Intuitive, High-Accuracy, Multi-Degree-of-Freedom Input Method for Mobile Devices. *In Proceedings of the 28th Annual SIGCHI Conference on Human Factors in Computing Systems* (Atlanta, Georgia, April 10 – 15, 2010). CHI'10. ACM, New York, NY, 1657-1660.

Schwarz, J., Mankoff, J., and Matthews, H. S. Reflections of Everyday Activities in Spending Data. *In Proceedings of the 27th Annual SIGCHI Conference on Human Factors in Computing Systems* (Boston, Massachussets, April 4 – 9, 2009). CHI '09. ACM New York, NY, 1737-1740.

AWARDS AND HONORS

Microsoft PhD Fellowship 2012-2013
Awarded to outstanding PhD students in the field of computer science.

First Place, UIST Student Innovation Contest 2011
Team won "Most Useful" category for window manipulation using touch mouse

Grand Prize, Microsoft Intern Windows Phone 7 Application Contest 2011
Developed application that uses face detection and audio feedback to help people take photos of themselves

Apple Women in Engineering Scholarship 2011

Selected for the UIST Doctoral Symposium 2010
Selection based on impact of doctoral thesis work.

First Place, UIST Student Innovation Contest 2009
Led team that developed in-air input device using pressure-sensitive keyboard.

NSF Graduate Research Fellow 2009-2012
Offers the nation's research leaders of tomorrow exceptional funding.

Finalist, Google Anita Borg Scholarship 2009
National scholarship honoring women in computer science

Finalist, CRA Undergraduate Research Award 2008-2009
Recognizes undergraduate students in who show outstanding research potential.

ARCS Scholar 2009-2012
National organization awarding academically outstanding scientists.

Computer Science Outstanding Senior Award (University of Washington) 2009
Honors top 3 seniors in computer science for exceptional undergraduate academics.

Finalist, President's Medal and Dean's Medal (University of Washington) 2009
Honors top graduating senior for exceptional undergraduate academic performance.

Goldwater Scholar 2006-2007
Supports American undergraduate students with outstanding potential.

Member, Phi Beta Kappa 2007-Present
National Academic honor society.

Computer Science Award for Excellence (University of Washington) 2007
For outstanding performance in computer science.

Presidential Freshman Medalist (University of Washington) 2005
Awarded annually to the single highest achieving freshman among class of 9,000.

TEACHING

Instructor, Building user interface tools for the Web, Carnegie Mellon University. 2011

Teaching Assistant, Introduction to Media Programming, Carnegie Mellon University. 2011

Instructor, The Art and Science of Juggling, Carnegie Mellon University. 2010

Teaching Assistant, Introduction to Programming, University of Washington. 2006 - 2007

SERVICE

Co-Chair, Student Innovation Contest, UIST 2012

Twenty-fifth annual ACM Symposium on User Interface Software and Technology

Reviewer

CHI 2011, UIST 2011, ICMI 2011, CHI 2012, CHI 2013, UIST 2013, CHI 2014, UIST 2014, TOCHI 2014, CSCW 2014, TEI 2014

INVITED PRESENTATIONS

Most Contagious 2013 2013

Presentation on the "Future of Touch" at a major marketing conference

SIGGRAPH 2009 Emerging Technologies 2009

Helped develop and present Scratch Input. New Orleans, LA.

OTHER ACTIVITIES

Windows Phone 7 Applications 2011-2012

Co-developed 8 applications for Windows Phone 7 under the publisher name Electric Squash Studios. Developed "Headshot" application, which was featured in Windows App Store for many months. Total downloads of applications exceeds 500,000. http://www.electricsquashstudios.com

Ski Training Director, Husky Winter Sports 2008

Created curriculum, led training sessions. PSIA Certified Level 1 Ski Instructor.