

RESEARCH INTERESTS

My research interests include human computer interaction, ubiquitous computing, and digital media, with an emphasis on the design of applications and interaction techniques for mobile devices. Methodologically, I build prototypes and conduct in situ and laboratory-based user studies with qualitative and quantitative measures.

EDUCATION

Ph.D. in Computer Science, University of California, San Diego, June 2011
Lightweight Social Communication using Visual Media and Mobile Phones

M.S. in Computer Science, University of California, San Diego, March 2009

M.A. in Interdisciplinary Computer Science, Mills College, January 2009

B.A. in Anthropology, high honors, University of California, Berkeley, January 1997

PROFESSIONAL EXPERIENCE

Teaching

Instructor, University of California, San Diego (Fall 2011)

Computer Science 118: Applications in Ubiquitous Computing

Taught discussion and project based course, employing active learning methods. Emphasized reading and analyzing research papers and engaging in original research. Received excellent student reviews.

Teaching Assistant, University of California, San Diego (Winter 2010)

Computer Science 8b: Introduction to Java Programming

Led discussion, created programming assignments, tutored, and managed grading in course with 60+ students and 6 grading assistants. Received excellent student and faculty reviews.

Research

Graduate Research Assistant, University of California, San Diego (2007-2011)

Designed and evaluated applications and interaction techniques for communication using mobile devices. Coordinated distinguished lecture series on ubiquitous computing. Advised by Bill Griswold and Jim Hollan.

Research Intern, AT&T Shannon Laboratory, Florham Park, NJ (Summer 2010)

Designed shadow gestures for interacting with mobile projected displays. Implemented prototype gesture recognition system, employing computer vision, and conducted user studies. Submitted patent application. Project was one of five selected from AT&T Labs - Research as an example of innovation. CTO presented demo at Board of Directors meeting, CEOs meeting, and IEEE Global Communications Conference (GLOBECOM) 2011.

Research Intern, Lawrence Berkeley National Laboratory, Berkeley, CA (2004-2005)

Implemented and evaluated overlay network construction algorithms and routing protocols.

Research Intern, Carnegie Mellon University (Summer 2003)

Created graphical demonstration system for experimental prototype Qpipe Staged Database System.

Other Engineering

Software Engineer, LGC Software (2012-present)

Creating Android applications (<https://play.google.com/store/apps/developer?id=Miss+Unicorn>), including design and implementation. Consulting in software research and development.

Graduate Assistant, Mills College, Oakland, CA (2002-2004)

Developed database-driven web tools for faculty access to course and student information.

Senior Software Engineer, Verza Inc., San Francisco and Verza BV, Amsterdam (1999-2002)

Created database-driven web tools for customers (e.g., account mgmt) and employees (e.g., customer support).

HONORS AND AWARDS

Doctoral consortium travel fellowships for ACM UIST 2010 and Ubicomp 2010

Coordinated successful grant application to UC MICRO: *Campus of the Future*, 2007-2008

National Science Foundation Graduate Research Fellowship, 2004-2007

University of California, San Diego, Chancellor's Fellowship, 2004-2008

University of California, Berkeley, Regents' Scholarship, 1991-1995

Camden County (Rowan) College Programming Competition: First Place, 1990

PROFESSIONAL ACTIVITIES

Program Committee

Associate Chair, Works-In-Progress, ACM Conference on Human Factors in Computing Systems (CHI), 2012

Doctoral Consortium panelist, US / Mexico Ubicomp Workshop Uniting the Californias (WUC), 2011

Student Volunteer Co-Chair, ACM Symposium on User Interface Software and Technology (UIST), 2010

Grant Reviewer

National Science Foundation (NSF) panelist, 2012

Paper Reviewer

ACM Conference on Human Factors in Computing Systems (CHI), 2010–2013

ACM Symposium on Engineering Interactive Computing Systems (EICS), 2013

ACM Conference on Human-Computer Interaction with Mobile Devices and Services (MobileHCI), 2011-2013

ACM Conference on Computer-Supported Cooperative Work (CSCW), 2010–2012

ACM Conference on Interactive Tabletops and Surfaces (ITS), 2012

Conference on Automotive User Interfaces and Interactive Vehicular Applications (Automotive UI), 2009

Student Volunteer

ACM Conference on Human Factors in Computing Systems (CHI), 2009

ACM Conference on Computer-Supported Cooperative Work (CSCW), 2008

Memberships and Affiliations

Association for Computing Machinery (ACM)

Institute for Electrical and Electronics Engineers (IEEE)

UCSD Ubiquitous Computing and Social Dynamics Lab (Department of Computer Science)

UCSD Distributed Cognition and Human Computer Interaction Lab (Department of Cognitive Science)

UCSD Women in Computing, Women in HCI

Community and Mentorship:

US / Mexico Ubicomp Workshop Uniting the Californias (WUC), 2010-2011 (participant)

UCSD Research Expo, 2009-2011 (poster and demo presenter)

UCSD Cognitive Science Student Association conference, 2009 (demo presenter)

FIRST robotics competition, 2008-2009 (judge)

UCSD programming contest, 2008 (judge)

Grace Hopper Celebration of Women in Computing, 2006 (participant)

CRA-W Graduate Cohort Workshop, 2005-2006 (participant)

Expanding Your Horizons, 2003-2004 (workshop assistant)

PATENTS

Li, Kevin A., and **Cowan, Lisa G.** Method and Apparatus for Interacting with Projected Displays Using Shadows. Docket No. ATT/2010-0924. Filed December 2010 (pending).

PUBLICATIONS

Conference Papers

Cowan, L., Li, K. ShadowPuppets: Supporting Collocated Interaction with Mobile Projector Phones Using Hand Shadows. *Proceedings of ACM Conference on Human Factors in Computing Systems (CHI) 2011.*

Cowan, L., Weibel, N., Pina, L. R., Griswold, W. G., Hollan, J. D. Ubiquitous Sketching for Social Media. *Proceedings of ACM Conference on Human-Computer Interaction with Mobile Devices and Services (MobileHCI) 2011.*

Cowan, L., Griswold, W. G., Barkhuus, L., Hollan, J. D. Engaging the Periphery for Visual Communication on Mobile Phones. *Proceedings of IEEE Hawaii International Conference on Systems Sciences (HICSS) 2010.*

Journal Articles

Cowan, L., Weibel, N., Griswold, W. G., Pina, L., Hollan, J. D. Projector Phone Use: Practices and Social Implications. *Personal and Ubiquitous Computing: Volume 16, Issue 1, 2012.*

Magazine Articles

"Researcher Spotlight" in Raimund Dachzelt, Jonna Häkkinä, Matt Jones, Markus Löchtefeld, Michael Rohs, Enrico Rukzio. Pico Projectors – Firefly or Bright Future? *ACM Interactions.* (March 2012).

Workshops and Demonstrations

Barkhuus, L., Bales, E., **Cowan, L.** It Takes an Online Village: Internet Use by New Mothers for Social Support. *ACM Conference on Human Factors in Computing Systems (CHI) 2013, Workshop on Motherhood and HCI.*

Cowan, L., Griswold, W. G. Projector Phones Afford Novel Interaction Modalities. *ACM Conference on Human Factors in Computing Systems (CHI) 2011, Position paper presented at the Workshop on Mobile and Personal Projection.*

Cowan, L., Supporting Self-Expression for Informal Communication. *ACM Symposium on User Interface Software and Technology (UIST) 2010, Doctoral Symposium.*

Cowan, L., Supporting Self-Expression for Informal Communication. *ACM International Conference on Ubiquitous Computing (Ubicomp) 2010, Doctoral Colloquium.*

Cowan, L., Griswold, W. G., Hollan, J. D. Applications of Projector Phones for Social Computing. *International Conference on Pervasive Computing (Pervasive) 2010, Ubiprojection Workshop.*

Weibel, N., **Cowan, L.,** Pina, L. R., Hollan, J. D., Griswold, W. G. Enabling Social Interactions Through Real-Time Sketch-Based Communication. *Demonstration presented at the ACM Symposium on User Interface Software and Technology (UIST) 2010.*

Theses

Cowan, L. Lightweight Social Communication using Visual Media and Mobile Phones. Ph.D. dissertation, Department of Computer Science, University of California, San Diego, 2011.

Cowan, L. Tangible User Interfaces: Transparency and Expressive Power in Post-WIMP Direct Manipulation. M.S. Research Exam, Department of Computer Science, University of California, San Diego, March 2009.

Cowan, L. Emotipix: Mobile Phones as Social Peripheral Displays. M.A. Thesis, Department of Math and Computer Science, Mills College, January 2009.

Cowan, L. *Hobbies and Work: An Ethnography of Ceramic Artists. B.A. Honors Thesis, Department of Anthropology, University of California, Berkeley, January 1997.*

Invited Talks

August 22, 2012. **Yahoo! Research**, Sunnyvale, CA. Mobile Innovations Group. [Lightweight Social Communication using Visual Media and Mobile Phones.](#) (Host: Dr. Lars Erik Holmquist)

July 23, 2012. **University of Zurich**, Switzerland. Dynamic and Distributed Information Systems Group, Department of Informatics. [UbiSketch: Ubiquitous sketching for social media.](#) (Hosts: Prof. Abraham Bernstein, Prof. Elaine Huang)

June 13, 2012. **Qualcomm**, La Jolla, CA. User Experience Group. [Interaction with personal mobile projectors.](#) (Host: Dr. Jonathan Kies)

July 7, 2011. **Nokia Research Center Hollywood**, CA. [Lightweight Social Communication using Visual Media and Mobile Phones.](#) (Hosts: Dr. Daniel Ashbrook, Dr. Sean White)

June 28, 2011. **Queen's University**, Kingston, Canada. Human Media Lab, School of Computing. [Lightweight Social Communication using Visual Media and Mobile Phones.](#) (Host: Prof. Roel Vertegaal)

Press Coverage (Selected)

Apr. 19, 2012. **ShadowPuppets prototype lets you pinch-to-zoom, click, and scroll with shadow gestures**, *The Verge, Mobile Hands-On*, <http://www.theverge.com/2012/4/19/2960332/shadowpuppets-prototype-lets-you-pinch-to-zoom-click-and-scroll-with>

Apr. 19, 2012. **Hands-on with AT&T Labs prototypes: ShadowPuppets and haptic steering wheel**, *Engadget, News*, <http://www.engadget.com/2012/04/19/hands-on-with-atandt-labs-prototypes-shadowpuppets-and-haptic-ste/>

Sept. 2, 2011. **Doodle on your Facebook and Twitter in real-time with UbiSketch**, *CBS News, Tech News*, http://www.cbsnews.com/8301-501465_162-20101003-501465.html

Sept. 1, 2011. **Tweet your doodles with UbiSketch**, *NewScientist, One Percent*, <http://www.newscientist.com/blogs/onepercent/2011/09/tweet-your-doodles-with-ubiske.html>

Sept. 1, 2011. **Doodle While You're bored? Now You Can Tweet Your Notebook Art With UbiSketch**, *MediaBistro.com, AllTwitter*, http://www.mediabistro.com/alltwitter/doodle-while-youre-bored-now-you-can-tweet-your-notebook-art-with-ubisketch_b13357#more-13357

REFERENCES

Bill Griswold (PhD advisor)

Professor, Department of Computer Science
University of California, San Diego
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James D. Hollan (PhD co-advisor)

Professor, Department of Cognitive Science and Computer Science
University of California, San Diego
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Kevin Li (Internship mentor)

Researcher, AT&T Labs - Research
kevinli@research.att.com, +1 (973) 360-7071

Nadir Weibel (Collaborator)

Postdoctoral Researcher, Department of Cognitive Science
University of California, San Diego
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Adriene Jenik (Doctoral committee member)

Director and Professor, School of Art
Arizona State University
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Ellen Spertus (MA advisor)

Professor, Department of Math and Computer Science
Mills College
spertus@mills.edu, +1 (510) 430-2011

LANGUAGES

English (native), Spanish (fluent), Dutch (basic)

PROGRAMMING LANGUAGES AND TOOLS

Programming: C#, .NET, Java, C, C++, Perl, Javascript, Visual Basic for Applications, Python

Web Development: Web Services, ASP, IIS, HTML, Apache, Tomcat, CGI, JSP/Servlets

Database Development: Oracle, SQL, PL/SQL, PostgreSQL, SQL Server, Access

Operating Systems: UNIX / Linux, Windows, Mac, Windows Mobile, Android

Other: Visual Studio, Eclipse, LaTeX, CVS, Subversion, GIT, MATLAB, UML, OpenCV