

## 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, implementation, and marketing. 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), 2012

### *Paper Reviewer*

ACM Conference on Human Factors in Computing Systems (CHI), 2010–2012

ACM Conference on Human-Computer Interaction with Mobile Devices and Services (MobileHCI), 2011-2012

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

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 Dachsel, Jonna Häkkinä, Matt Jones, Markus Löchtefeld, Michael Rohs, Enrico Rukzio. Pico Projectors – Firefly or Bright Future? *ACM Interactions*. **In Press** (expected March/April 2012).

### Workshops and Demonstrations

**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**

July 7, 2011. Nokia Research Center Hollywood. Lightweight Social Communication using Visual Media and Mobile Phones.

## **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](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](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