BJÖRN HARTMANN

Associate Professor, Computer Science Division
University of California, Berkeley
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Qualcomm Faculty Fellow
Chief Technology Officer, Jacobs Institute for Design Innovation
Co-founder, CITRIS Invention Lab
Director, CITRIS Connected Communities Initiative

RESEARCH INTERESTS

Human-Computer Interaction, Design Tools, User Interface Engineering, Swarm Systems, Digital Fabrication, Crowdsourcing, Learning at Scale.

My research in Human-Computer Interaction focuses on novel design, prototyping, and implementation tools for the era of post-personal computing. As computation moves away from single-user desktop applications, I create user interfaces that leverage novel input technologies; and crowdsourcing interfaces that rely on contributions by many users.

PUBLICATIONS

Please see my web page or Google Scholar for refereed and invited publications.

EDUCATION

Stanford University, Stanford, CA
09/2009 PHD in *Computer Science.* Advisor: Scott R. Klemmer

University of Pennsylvania, Philadelphia, PA
MSE in *Computer and Information Science,* BSE in *Digital Media Design*, summa cum laude
12/2002 BA in *Communication*, summa cum laude, with minor in *Fine Arts*

EMPLOYMENT

University of California, Berkeley, CA
07/2015 - PRESENT *Associate Professor, Department of Electrical Engineering and Computer Sciences*
09/2009 - 06/2015 *Assistant Professor, Department of Electrical Engineering and Computer Sciences*

04/2008 - 06/2008 Microsoft Research, Redmond, WA
Research Intern with Merrie Morris, Andrew Wilson, and Hrvoje Benko.

09/2004 - 09/2009 Stanford University, Stanford, CA
Graduate Research Assistant & Course Assistant
Research with Scott R. Klemmer. Course assistant for
Terry Winograd, Scott R. Klemmer, and John C. Mitchell.

01/2004 - 09/2004 IUT Montreuil, University of Paris-8, Montreuil, FRANCE
Research Engineer with Catherine Pelachaud.

01/2003 - 12/2003 Contexterrior Media, Amsterdam, NETHERLANDS
Principal
Managed graphic design, distribution, and promotion of indepenent record label.
Designed and programmed online label textone.org. Recording artist and DJ.

06/2001 - 08/2001 University of Rome "La Sapienza," Rome, ITALY
Research Assistant with Catherine Pelachaud.

01/2001 - 12/2002 University of Pennsylvania, Philadelphia, PA
Undergraduate Research Assistant & Teaching Assistant
Research with Norm Badler. Teaching assistant for Norm Badler, Joshua Mosley and
Steven Lane in Computer Science; for Sharka Hyland in Fine Arts.

AWARDS AND HONORS

2015	ACM EICS Conference Best Paper Award (First Author: Will McGrath)
2015	Computer Science Division Diane S. McEntyre Award for Excellence in Teaching
2013	Alfred P. Sloan Foundation Research Fellowship
2012	Okawa Foundation Research Grant
2012	NSF Award: Collaborative Research: Strategies for Crowdsourcing Complex Design Work
2012	NSF CAREER Award: Advancing End-User ProgrammingWith Expertise Sharing Tools
2012	NSF Award Collaborative Research: Expeditions in Computer Augmented Program Engineering (ExCAPE): Harnessing Synthesis for Software Design 18 CO-PIS from 8 different institutions. Other Berkeley CO-PIS: Ras Bodik, Alberto Sangiovanni-Vincentelli, Sanjit Seshia.
2012	NSF Award US-France Collaboration: Architectures and Interaction Paradigms for Multi-Surface Environments. French collaborators: Michel Beaudouin-Lafon, Wendy Mackay.
2012	CHI Conference Best Paper Award
2011	NSF Award EAGER: Fabrication and Brokering through Information Technology (FABBIT).
2011	Intel Undergraduate Apprenticeship Grant.
2011	CHI Conference Best Paper Honorable Mention (2x)
2011	Microsoft Faculty Fellowship Finalist
2011, 2012, 2013	Adobe Systems Research Gifts
2011, 2012, 2013	Google Research Awards (2011 with Maneesh Agrawala)
2010	Berkeley Presidential Chair Fellow *Teaching Improvement Award*
2010-PRESENT	Qualcomm Faculty Fellow
2010	Intel Seed Grant
2010	Willow Garage PR2 robot platform beta program winner CO-PIS: Pieter Abbeel, Trevor Darrell, Ken Goldberg, Jitendra Malik, Michael Jordan, Claire Tomlin, Ruzena Bajcsy, Björn Hartmann
2010	UC Berkeley Townsend Center G.R.O.U.P. Funding for Summer apprenticeship
2010	UC Berkeley Townsend Center Course Thread on Human-Centered Design *Undergraduate Education Grant, with Greg Niemeyer*
2010	UIST Conference Best Student Paper Award (First Author: Michael Bernstein)
2010	CHI Conference Best Paper Honorable Mention
2008	UIST Conference Best Student Paper Award
2007	CHI Conference Best Paper Award
2006	UIST Conference Best Paper Award
2006-2009	Stanford Graduate Fellowship
2006	Stanford Centennial Teaching Assistant Award
2006	Color Field Camera: Best Flickr Project, Yahoo! Open Hack Day
2006	d.tools: 3rd place, Microsoft Research Silicon Valley Road Show
2004-2006	Stanford School of Engineering Fellowship
2002	Phi Beta Kappa honor society

TEACHING EXPERIENCE

UC BERKELEY FALL 2012, 2013, 2014	cs294-84: Interactive Device Design *Co-taught with Paul Wright (ME)*
FALL 2011 FALL 2010	cs260: Research Topics in Human-Computer Interaction *GSI: Drew Fisher* *GSI: Lora Oehlberg*
SPRING 2014 SPRING 2013 SPRING 2011 SPRING 2010	cs160: User Interface Design *Co-teacher: Maneesh Agrawala; GSIs: S. Rubin, E. Xiao, B. Cheng* *GSIs: Neha Kumar, Kate Rushton* *GSIs: Anuj Tewari, Prayag Narula* *Co-teacher: Maneesh Agrawala; GSIs: Anuj Tewari, Kenrick Kin*
SPRING 2011	cs294-68: Crowdsourcing *Co-taught with Michael Franklin (EECS), Tapan Parikh (iSchool)* *Student facilitator: Anand Kulkarni*
SPRING 2012 FALL 2010 SPRING 2010	cs298-54: User Interface Prototyping *Student co-organizers: Ariel Haney, Bailey Smith, Travis Yoo (all from the iSchool).* *Student co-organizers: Lora Oehlberg (ME), Niranjan Krishnamurty, Kate Smith (iSchool)* *Student co-organizers: Lora Oehlberg (ME), Niranjan Krishnamurty, Jessica Santana (iSchool)*
FALL 2010 FALL 2011	cs298-50: Beyond the Mobile Phone *Seminar co-organized with John Canny* *Seminar co-organized with John Canny*
STANFORD UNIVERSITY FALL 2007	cs242: Programming Languages *Course Assistant for John C. Mitchell*
SPRING 2006	cs294H: Integrating Physical and Digital Interactions *Course Assistant for Scott R. Klemmer*
WINTER 2006	cs247: Human Computer Interaction Design Studio *Course Assistant for Scott R. Klemmer*
SPRING 2005	cs378: Phenomenological Foundations of Cognition, Language, and Computation *Course Assistant for Terry Winograd*
U. OF PENNSYLVANIA FALL 2002	cse399: Special Topics in Robotics and Computer Animation *Teaching Assistant for Steven Lane*
SPRING 2001	cse377: Virtual World Design *Teaching Assistant for Norm Badler and Joshua Mosley*
FALL 2001 + SPRING 2002	fnar265: Digital Imaging *Software Tutor (Photoshop, Illustrator, Quark) for Sharka Hyland*

GRADUATE ADVISING

CURRENT PHD STUDENTS, POSTDOCS AND COLLABORATORS	Andrew Head, Julie Newcomb (with R. Bodik), Valkyrie Savage (NSF Fellow), Peggy Chi (Berkeley Fellow, Google Fellow), Amy Pavel (co-advised with M. Agrawala, NDSEG Fellow), Tim Campbell (with E. Paulos), William McGrath (Stanford)
POSTDOC ALUMNI	Mozziyar Etemadi (with Shuvo Roy at UCSF)
PHD ALUMNI	Kenrick Kin (with M. Agrawala, 2012), Lora Oehlberg (with A. Agogino, 2012), D Coetzee (with A. Fox, M. Hearst, left program 2015),
CURRENT MS STUDENTS	*none*
MS ALUMNI	Alvin Yuan (2015), Manas Mittal (2013), Wei Wu (Dere Design Award Winner, 2013), Philipp Gutheim (2012), Andrew Fisher (2012)

UNDERGRADUATE RESEARCH ADVISING

UC BERKELEY: CURRENT
Eldon Schoop, Michelle Ngyuen, Jingyi Li

ALUMNI
Alex Tyler, Claire Tuna (Marvell), Amy Pavel (now Berkeley PhD), Charlie Hsu, Matthew Can (now Red Lotus Technologies), Vidya Ramesh (Stanford CS MS), Matthew Chan (UC Irvine MS), Mark Dhillon (Wisconsion-Madison CS MS)

NSF SUPERB SUMMER INTERNS
Mary Kery (Wellesley), Christine Dierk (Elon, now UCB EECS), Kehontas Rowe (Mills College), Jasmine Jones (UMBC, now Michigan iSchool PhD), Bella Manoim (Bard)

STANFORD: 2005-2008
Daniel MacDougall, Antonio Ricciardi, Timothy Cardenas, Sean Follmer (now MIT Media Lab PhD), Loren Yu (CRA Outstanding Undergraduate Honorable Mention), Manas Mittal (now Berkeley EECS MS), Michael Bernstein (now CS faculty at Stanford), Nirav Mehta.

PROFESSIONAL ACTIVITIES

CONFERENCE CHAIR
AAAI HCOMP (Human Computation) 2013

CONFERENCE COMMITTEE CHAIR
UIST 2015 Program, CHI 2013 + CHI 2012 Interaction Techniques and Devices track, WWW 2012 User Interfaces track, CSCW 2011 Demonstrations (co-chair for each)

PROGRAM COMMITTEE
LEARNING@SCALE 2014, 2015, UIST 2009, 2012, 2013, MOBILE HCI 2011, CHI 2010, 2011, ITS 2010, 2012, HCOMP 2012, IUI 2009, TEI 2009, TABLETOP 2008, UBICOMP 2008 DEMOS

REFEREE
IWC JOURNAL 2012, PERVASIVE 2012, CSCW 2008-12, CHI 2005,2007-2012, UIST 2005-2012, IUI 2008, SIGGRAPH 2004,2011, SIGGRAPH ASIA 2010, SIGGRAPH ASIA ETECH 2009, IEEE SOFTWARE 2008, GI 2005,2007, NIME 2005, GMOD 2005, GI 2005, ADS 2004, AAMAS 2004, , CASA 2004, SCA 2004

WORKSHOP ORGANIZER
CHI 2013 FABRICATION WORKSHOP, CHI 2011 CROWDSOURCING

PANELIST
NSF 2010, 2012

STUDENT VOLUNTEER
CHI 2007 (PC MEETING), IUI 2005

TALKS

PRESENTATIONS
Scaling Active Learning Activities.
Rice University, Houston, TX, 15 Dec 2014.

Personalized Education.
ExCAPE Program Review, Philadelphia, PA, 27 Oct 2014.

Design Intent Tools for Fabricating User Interfaces
Airlie, VA, 14 Aug 2014.

Prototyping and Just-In-Time Learning Tools for Designers.
FXPal, Palto Alto, CA, 13 Aug 2014.

Prototyping the Internet of Things.
Secure Internet of Things Kickoff, Stanford, CA, 11 Aug 2014.

Q&A in Online Education: Experimental Results
ACM EC Workshop, Palo Alto, CA, 9 Jun 2014.

Designing Bespoke Interactive Devices.
Samsung R&D, Santa Clara, CA, 20 Nov 2014.
University of Pennsylvania, Philadelphia, PA, 27 Oct 2014.
O'Reilly Solid Conference, San Francisco, CA, 21 May 2014.
Microsoft Social Computing Symposium, New York, NY, 16 Jan 2014.
Accenture Technology Labs, San Jose, CA, 10 Jan 2014.
Northwestern University Segal Seminar, Evanston, IL, 03 Dec 2013.

MOOCs and Anti-MOOCs.
Adobe Retreat, Berkeley, CA, 12 Nov 2013.

Digital Fabrication and 3D Printing in the Invention Lab.
CITRIS Event on the New Manufacturing Revolution: 3D Printing and its Impact on Society, Berkeley, CA, 06 Nov 2013.

Some Wicked Problems of Software Design.
Symposium on Wicked Problems in Socio-Ecological Systems, Berkeley, CA, 26 Oct 2013.

Fabbing Sensors and Drawing Gestures: Design Tools for Post-PC User Interfaces.
GE Research, San Ramon, CA, 23 Aug 2013.
Qualcomm, Santa Clara, CA, 07 Jun 2013.
UIUC, Champagne-Urbana, IL, 25 Mar 2013.
CMU, Pittsburgh, CA, 11 Oct 2012.

FABBIT: Fabrication and Brokering Through Information Technology.
NSF CMMI Meeting, Boston, MA, 10 Jul 2012.

Feedback and Free(?) Snacks: Two Experiments in Crowd Education.
U Washington MSR Summer Institute, Suncadia, WA, 19 Jul 2012.

Abstractions and Frameworks for Multi-Touch, Multi-Surface Applications.
INRIA-Silicon Valley Workshop, Paris, France, 21 May 2012.

Management Techniques for Crowd Work.
Seminar on People, Computers and Design, Stanford, CA, 18 May 2012.
MIT, Cambridge, MA, 26 April 2012.

Fabricating Sensors and Hacking Vending Machines.
MIT Media Lab, Cambridge, MA, 27 April 2012.
Sparkfun, Boulder, CO, 19 December 2011.

Instructions & Abstractions.
Digital Inquiry Symposium, Berkeley, CA, 28 April 2012.

Proton: Multitouch Gestures as Regular Expressions.
SIGCHI Paris, France, 23 January, 2012.
RWTH Aachen, Germany, 24 January 2012.
Telecom ParisTech, France, 25 January 2012.

Sketchign for Science.
Sketching in Hardware Workshop, Philadelphia, PA, 29 July 2011.

How Bodies Matter.
Embodied Design Research Lab, Berkeley, CA, 1 February 2011.

Crowdsourcing and Human Computation.
RAD Lab, Berkeley, CA, 10 November 2010.

Understanding and Supporting Online Expertise Sharing.
Institute of Cognitive and Brain Sciences. Berkeley, CA, 10 October 2010.

Imbuing Design & Development Tools With Social Skills.
IBM Almaden Research Center, San Jose, CA, 19 May 2010.

Enlightened Trial and Error.
Qualcomm Research Silicon Valley, Santa Clara, CA, 18 February 2010.

Collaborative Design Tools.
Computer Science Faculty Lunch, Stanford, CA, 24 November 2009.

Research Overview: Design & Development Tools.
Disney Research, Glendale, CA, 11 November 2009.

Crowdsourced Debugging.
Adobe Workshop, Stanford, CA, 27 October 2009.

Physical Computing: Inspiration, Tools & Research.
UC Berkeley INFO262 Guest Lecture, Berkeley, CA, 20 October 2009.

Enlightened Trial and Error.
IxDA – Interaction Design Association Conference, Vancouver, BC, 8 February 2009.

Job Talk: Enlightened Trial and Error.
Adobe Research, University of Calgary, Simon Fraser University – SIAT, UC San Diego, New York University, Microsoft Research Redmond, Brown University, Cornell University, University of Wisconsin–Madison, UC Berkeley, January - April 2009.

Redrawing the line between CPU and MCU.
Sketching in Hardware Workshop, Providence, RI, 27 July 2008.

The intersection between physical computing and web services.
O'Reilly Foo Camp, Sebastopol, CA, 13 July 2008.

Enlightened Trial and Error.
University of Washington DUB Lunch, Seattle, WA, 30 April 2008.

Enlightened Trial and Error.
MX Conference, San Francisco, CA, 22 April 2008.

Design as Exploration.
Adobe Systems, San Francisco, CA, 10 March 2008.

Enlightened Trial and Error.
UC Berkeley Design Futures lecture series, Berkeley, CA, 28 February 2008.

Enlightened Trial and Error.
University of Pennsylvania, Philadelphia, PA, 25 February 2008.

Prototypes and Mash-Ups: Tool Support for Rapid Off-the-Desktop Interaction Design.
Frog Design, San Francisco, CA, 21 May 2007.

Prototypes and Mash-Ups: Tool Support for Rapid Off-the-Desktop Interaction Design.
UC Berkeley IEOR170 guest lecture, Berkeley, CA, 7 February 2007.

Browse-Mash-Remix: Tools for rewriting the web.
Web Monday, Cooley Godward Kronish, Palo Alto, CA, 29 January 2006.

Prototypes and Mash-Ups: Tool Support for Rapid Off-the-Desktop Interaction Design.
Yahoo! Research, Berkeley, CA, 10 November 2006.

Prototyping Know-How: Rapidly prototyping active objects.
IDEO, Palo Alto, CA, 06 November 2006.

Reflective physical prototyping through integrated design, test, and analysis.
IBM Almaden Research Center, San Jose, CA, 25 October 2006.

Taking Mash-Ups beyond the Browser.
Silicon Valley Code Camp, Los Altos Hills, CA, 07 October 2006.

Ubiquitous Computing Mash-Ups. *Stanford BarCamp*, Stanford, CA, 27 August 2006.

Beyond APIs for buttons and sliders: Prototyping with integrated design, test and analysis.
Sketching in Hardware Workshop, Dearborn, MI, 25 June 2006.

d.tools - Rapid Interaction Prototyping for Information Appliances.
Stanford Computer Forum Human Computer Interaction Workshop, Stanford, CA, May 2005.

Björn Hartmann, Amitava Ghosh, Yael Maguire, David Wolter. Panel on 5G Use Cases and Opportunities. North American 5G Workshop. Asilomar, CA, November 2014.

Krisztian Flautner, Trishul Chilimby, **Björn Hartmann**. Panel on Reality Checks for Energy Research. Workshop on Power Aware Computing and Systems (HotPower '09), Big Sky, MT, October 2009.

Thomas Dreier, Armin Medosch, Till Jaeger, Christiane Asschenfeldt, Lawrence Lessig, Michael Grob, **Björn Hartmann**. *Launch Panel for Creative Commons Germany*. Wizards of OS Conference 3, Berlin, June 2004.

Volker Grassmuck, Kristin Thomson, Wendy Selzer, **Björn Hartmann**, Karsten Kinsat. *Compensation Decentral Panel* at Free Bitflows Conference, Vienna, June 2004.

MEDIA COVERAGE

In the Domain of Design, Berkeley Engineer Cover Story, Spring 2015.

The Future Is 3D-Printed. UC TV, Jan 2014.

Google Glass mod gives you control over home appliances with one touch pairing. Engadget, Dec 2013.

Educating a Maker: The Berkeley Perspective. Rakesh Sharma, Forbes.com, Nov 2013.

Hacked Vending Machine Trades Snacks For Skills. Tech News Daily. April 2012.

Touchscreen merges the real and digital worlds. Barras, Colin. New Scientist, 1/22, 2010.

Designing Gestural User Interfaces. Saffer, Dan. O'Reilly, 2008. (d.tools & Exemplar)

Making Things Talk. Igoe, Tom. O'Reilly, 2008. (Exemplar)

Qualität durch Basteln. Virtel, Martin. Financial Times Deutschland, 2/23, 2006. (d.tools)

Labels ohne Platten. Roettgers, Janko. 2004. *WDR3* - German Public Radio Station.

New copyright grants artists greater license. Schenker, Jennifer L. International Herald Tribune, June 14, 2004.

PERSONAL

Past editor for *Ambidextrous Magazine*, Stanford's Journal of Design. Creator of interactive art installations with Digital Dacha. Recording artist for record labels Background, Camomille, Mille Plateaux, Pokerflat, Regular, Textone, Tuning Spork. Citizen of Germany. United States permanent resident.