

Kurtis Heimerl

Facebook
1 Hacker Way,
Menlo Park, CA 94025

+1 (206) 659-5878
kheimerl@cs.washington.edu
<http://kurti.sh>

Interests

My research focuses on community-based systems across computer networks, international development, and crowdsourcing.

Academic

| | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| University of Washington Joining as an Assistant Professor in September 2016 | 2016 |
| University of California, Berkeley Postdoctoral Researcher Advisors: Eric Brewer and Tapan Parikh | 2014 |
| University of California, Berkeley Doctor of Philosophy, Computer Science Thesis: <i>Community Cellular Networks</i> Advisors: Eric Brewer and Tapan Parikh | 2013 |
| University of California, Berkeley Master of Science, Computer Science Thesis: <i>Metamouse: Improving Sharing of Existing Educational Applications</i> | 2009 |
| University of Washington Bachelor of Science, Computer Engineering (Magna Cum Laude) | 2007 |

Research

| | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|
| Community Cellular Networks Investigated small-scale, locally owned cellular networks. Developed extensions to OpenBTS to enable more local content in network. Conducted longitudinal deployment of both technologies in rural Papua, Indonesia. Demonstrated sustainability of locally-owned cellular in Papuan context, as well as value to local community. Study and deployments ongoing. | University of California, Berkeley |
| Communitysourcing Investigated mechanisms for targeted specific offline communities of users with crowdsourcing tasks. Developed and deployed <i>Umati, the Communitysourcing Vending Machine</i> , a crowdsourcing kiosk. Using Umati, demonstrated ability to target specific crowds with rewards and tasks that fit those crowds. | University of California, Berkeley |
| The Evil Telco Produced OpenBTS installation for demonstrating cellular attacks against activists. Deployed this at Internet freedom organizations and conferences, with participants from many different countries. | University of California, Berkeley |
| Metamouse Developed software that automatically converts single-player games into multiplayer games for areas with chronic computer sharing caused by lack of resources. Developed techniques for sharing and demonstrate that majority voting (e.g., requiring most students to agree on an answer) was the best solution in the face of varying computer proficiency. | University of California, Berkeley |

Awards

| | |
|-------------------------------------------------------------------------------------------------------------|------|
| MIT Technology Review "35 under 35" | 2014 |
| Best Paper at DySPAN 2014: GSM Whitespaces: An Opportunity for Rural Cellular Service | 2014 |
| Community Award at NSDI 2013: Expanding Rural Cellular Networks with Virtual Coverage | 2013 |
| Best Paper at CHI 2012: Communitysourcing: Engaging Local Crowds to Perform Expert Work Via Physical Kiosks | 2012 |
| NSF Graduate Research Fellowship | 2008 |
| NSF Graduate Research Fellowship (Honorable Mention) | 2007 |
| Bob Bandes Memorial Teaching Award (Honorable Mention) | 2005 |

Selected Press

| | |
|---------------------------------------------------------------------------------------------------------|------|
| Facebook Hires Founders Of Cellular-Network-In-A-Box Company Endaga Tech Crunch | 2015 |
| DIY Telecoms The Economist | 2015 |
| Endaga Brings Rural Villages Online With a Cell Network in a Box Re/code | 2014 |
| Kurtis Heimerl: 35 Innovators under 35 MIT Technology Review | 2014 |
| New Eavesdropping Equipment Sucks All Data Off Your Phone Newsweek | 2014 |
| Cellular's Open Source Future is Latched to Tallest Tree in the Village Ars Technica | 2014 |
| Powered by the Sun, Telcos Open up Cellphone's Final Frontier Reuters | 2012 |

Teaching Experience

| | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| University of California, Berkeley Summer Undergraduate Program in Engineering Research at Berkeley (SUPERB) Mentor for Cristine Dierk working on communitysourcing and Mark Watt working on cellular security | Berkeley, CA, 2013 |
| University of California, Berkeley Lead Instructor of undergraduate class CS-194-22: Cellphones as a computing platform | Berkeley, CA 2012 |
| University of California, Berkeley Summer Undergraduate Program in Engineering Research at Berkeley (SUPERB) Mentor for Kehontas Rowe from Mills College working on communitysourcing. | Berkeley, CA, 2011 |
| University of California, Berkeley Graduate Student Instructor of graduate class CS-294-35: Cellphones as a computing platform under Professor Eric Brewer. | Berkeley, CA 2010 |
| University of Washington Teacher's assistant for operating systems courses under Professors Ed Lazowska and John Zahorjan | Seattle, WA 2006-2007 |
| University of Washington Teacher's assistant for introductory computer programming courses under Professor Hal Perkins and Lecturer Stuart Reges. | Seattle, WA 2005 |

Academic Experience

| |
|-----------------------------------------------------|
| Program Committee: ICTD 2016 |
| Program Committee: HotMobile 2015 |
| Reviewer: CHI 2016 |
| Program Committee: ICTD 2015 |
| Reviewer: CHI 2015 |
| Reviewer: UIST 2014 |
| Program Committee: ACM DEV 2014 |
| Program Committee: CHI Work-in-Progress 2014 |
| Program Committee: ICTD 2013 |
| Reviewer: CHI 2013 |
| Program Committee: CHI Work-in-Progress 2013 |
| Reviewer: UIST Demos 2012 |
| Reviewer: ITID 2011 |

Industry Experience

| | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| Facebook Endaga team and IP joined Facebook to continue their rural access initiatives. | Menlo Park, CA 2015-Present |
| Endaga, Inc Founder/CEO, focused on developing simple cellular networks that can be operated by anyone. Raised 1.2M seed round from investors such as Mitch Kapor, Jeff Hammerbacher, and Sanjit Biswas. Joined Facebook August 2015. | Oakland, CA 2014-2015 |
| Range Networks Community Manager/Developer for open-source OpenBTS release. | San Francisco, CA 2011-2014 |
| Microsoft Research India Intern assisting with SMS and voice technologies for the Digital Study Hall distance learning project. | Bangalore, India 2007 |
| Google.com Intern developing additions to the Hadoop map-reduce framework. | Mountain View, CA 2007 |
| Amazon.com Intern creating scalable, secure, and extensible service-oriented architecture components. | Seattle, WA 2005,2006 |

Peer-reviewed Conference or Journal Publications

- A Longitudinal Study of Local, Sustainable, Small-Scale Cellular Networks**
Kurtis Heimerl, Shaddi Hasan, Kashif Ali, Eric Brewer, Tapan Parikh. *Information Technologies & International Development (ITID)* 2015
- Analysis of Smartphone Adoption and Usage in a Rural Community Cellular Network**
Kurtis Heimerl, Anuvind Menon, Shaddi Hasan, Kashif Ali, Eric Brewer, Tapan Parikh. *International Conference on Information and Communication Technologies and Development (ICTD)* 2015
- Rescue Base Station**
Ibrahim Ghaznavi, Kurtis Heimerl, Umar Muneer, Abdullah Hamid, Kashif Ali, Tapan Parikh, Umar Saif. *5th Annual ACM Symposium on Computing for Development (DEV)* 2014
- GSM Whitespaces: An Opportunity for Rural Cellular Service**
Shaddi Hasan, Kurtis Heimerl, Kate Harrison, Kashif Ali, Anant Sahai, Eric Brewer. *IEEE Dynamic Spectrum Access Networks (DySPAN)* 2014 (**Best Paper Award**)
- An Experiment in Reducing Cellular Base Station Power Draw With Virtual Coverage**
Kurtis Heimerl, Shaddi Hasan, Kashif Ali, Tapan Parikh, Eric Brewer. *4th Annual ACM Symposium on Computing for Development (DEV)* 2013
- Local, Sustainable, Small-Scale Cellular Networks**
Kurtis Heimerl, Shaddi Hasan, Kashif Ali, Eric Brewer, Tapan Parikh. *International Conference on Information and Communication Technologies and Development (ICTD)* 2013
- Expanding Rural Cellular Networks with Virtual Coverage**
Kurtis Heimerl, Kashif Ali, Joshua Blumenstock, Brian Gawalt, Eric Brewer. *10th USENIX symposium on Networked Systems Design and Implementation (NSDI)* 2013 (**Community Award**)
- Convergence of Position Auctions under Myopic Best-Response Dynamics**
Matthew Cary, Aparna Das, Benjamin Edelman, Ioannis Giotis, Kurtis Heimerl, Anna Karlin, Scott Kominers, Claire Mathieu, Michael Schwarz. *Transactions on Economics and Computation (TEAC)* 2013
- Communitysourcing: Engaging Local Crowds to Perform Expert Work Via Physical Kiosks**
Kurtis Heimerl, Brian Gawalt, Kuang Chen, Tapan Parikh, Björn Hartmann. *Annual conference on Human Factors in Computing Systems (CHI)* 2012 (**Best Paper Award**)
- A Case Study on Designing Interfaces for Multiple Users in Developing Regions**
Kurtis Heimerl, Janani Vasudev, Kelly Buchanan, Tapan Parikh, Eric Brewer. *1st Annual ACM Symposium on Computing for Development (DEV)* 2010
- Metamouse: Improving Multi-user Sharing of Existing Educational Applications**
Kurtis Heimerl, Janani Vasudev, Kelly Buchanan, Tapan Parikh, Eric Brewer. *International Conference on Information and Communication Technologies and Development (ICTD)* 2010
- Greedy Bidding Strategies for Keyword Auctions**
Matthew Cary, Aparna Das, Benjamin Edelman, Ioannis Giotis, Kurtis Heimerl, Anna Karlin, Claire Mathieu and Michael Schwarz. *ACM Conference on Electronic Commerce (EC)* 2007

Workshop Papers and Works-in-progress

The Village Base Station

Kurtis Heimerl, Eric Brewer. *4rd ACM Workshop on Networked Systems for the Developing World (NSDR)*, 2010

Message Phone: A User Study and Analysis of Asynchronous Messaging in Rural Uganda

Kurtis Heimerl, RJ Honicky, Eric Brewer, Tapan Parikh. *3rd ACM Workshop on Networked Systems for the Developing World (NSDR)*, 2009

Metamouse: Multiple Mice for Legacy Applications

Kurtis Heimerl, Divya Ramachandran, Joyojeet Pal, Eric Brewer, Tapan Parikh. *Proceedings of the 27th international conference extended abstracts on Human factors in computing systems (CHI Extended Abstracts)* 2009

Demonstrations

Poster and Demonstration of Expanding Rural Cellular Networks with Virtual Coverage

Kurtis Heimerl, Kashif Ali, Joshua Blumenstock, Brian Gawalt, Eric Brewer. *Demo at 10th USENIX symposium on Networked Systems Design and Implementation (NSDI)* 2013

Communitysourcing: Engaging Local Crowds to Perform Expert Work Via Physical Kiosks

Kurtis Heimerl, Brian Gawalt, Kuang Chen, Tapan Parikh, Björn Hartmann. *Interactivity at the annual conference on Human Factors in Computing Systems (CHI)* 2012

Metamouse: Multiple Mice for Legacy Applications

Kurtis Heimerl, Divya Ramachandran, Joyojeet Pal, Eric Brewer, Tapan Parikh. *Demo at International Conference on Information and Communication Technologies and Development (ICTD)* 2009

Technical Reports

How Users Understand Cellular Infrastructure

Kurtis Heimerl, Tapan Parikh. *University of California, Berkeley Technical Report No. UCB/EECS-2012-42*

Transforming Community-based Healthcare with CommScape

Kuang Chen, **Kurtis Heimerl**, Tapan Parikh, Christine Robson and Beth Trushkowsky. *University of California, Berkeley Technical Report No. UCB/EECS-2009-155*

Enabling Innovation Below the Communication API

Ganesh Ananthanarayanan, **Kurtis Heimerl**, Matei Zaharia, Michael Demmer, Teemu Koponen, Arsalan Tavakoli, Scott Shenker, Ion Stoica. *University of California, Berkeley Technical Report UCB/EECS-2009-141*

Presentations

Rescue Base Station

ACM DEV '14, December 2014, San Jose, California, USA

Community Cellular

Indonesian Broadcasting Expo (IBX) October 2014, Bandung, Indonesia

Community Cellular

Jagongan Media Rakyat (JMR) October 2014, Jogjakarta, Indonesia

GSM White Spaces: An Opportunity for Rural Coverage

New York University, September 2014, NYC, NY

Community Cellular Networks

MIT D-Lab, September 2014, Boston, MA

Building Community Cellular Networks With Endaga

EmTech September 2014, Boston, MA

Building Community Cellular Networks With Endaga

USAID Frontiers in Development September 2014, Washington, DC

Technology and Infrastructure for Developing Regions

Facebook/Internet.org, July 2014, Palo Alto, CA

Community Cellular Networks in Rural Papua, Indonesia

Center for Southeast Asia Studies, February 2014, Berkeley, California

Sustainable, Small-Scale Cellular Networks

ICTD '13, December 2013, Cape Town, South Africa

An Experiment in Reducing Cellular Base Station Power Draw With Virtual Coverage

ACM DEV 4, December 2013, Cape Town, South Africa

Building and Running Community Cellular Networks with OpenBTS*IEEE Engineering For Change Webinar*, November 2013, Broadcast Online**Technology in Delivering Social Impact***Social Impact Speaker Series*, University of California, Berkeley, November 2013, Berkeley, California, USA**GSM White Space: Spectrum Regulation in Support of Community Cellular Networks***Change Seminar*, University of Washington, October 2013, Seattle, Washington, USA**Community Cellular Networks**

Google, October 2013, Mountain View, CA, USA

Community Cellular Networks

Facebook, October 2013, Menlo Park, CA, USA

Expanding Rural Cellular Networks with Virtual Coverage*NSDI '13*, April 2013, Lombard, Illinois, USA**The Village Base Station**

University of the Philippines, Dilman, March 2013, Dilman, Philippines

The Village Base Station: Community Cellular Radio*Pakistan-ICTD Workshop*, Lahore University of Management Sciences, January 2013, Lahore, Pakistan**The Village Base Station***Change Seminar*, University of Washington, December 2012, Seattle, Washington, USA**Mobile Security Survival Guide: What Every Activist and Rights Defender Needs to Know***Google Internet at Liberty*, June 2012, Washington DC, USA**Communitysourcing: Engaging Local Crowds to Perform Expert Work Via Physical Kiosks***CHI '12*, May 2012, Austin, Texas, USA**Communitysourcing: Engaging Local Crowds to Perform Expert Work Via Physical Kiosks***BiD Seminar*, University of California, Berkeley, April 2012, Berkeley, California, USA**Introduction to OpenBTS/hands-on hacking**

Lookout Mobile Security, March 2012, San Francisco, California, USA

The Evil Telco*OpenBTS HackDay - the Open Mobile Network*, June 2011, New York, New York, USA**Metamouse: Improving Multi-user Sharing of Existing Educational Applications***ICTD '10*, December 2010, Egham, UK**Infrastructure***School of Information ICTD Seminar*, October 2010, Berkeley, California, USA**The Village Base Station***NSDR '10*, June 2010, San Francisco, California, USA**MetaMouse: Improving the Sharing of Existing Applications***CITRIS Talk*, University of California, Berkeley, March 2010, Berkeley, California, USA**Message Phone: A User Study and Analysis of Asynchronous Messaging in Rural Uganda***NSDR '09*, October 2009, Big Sky, Montana, USA

References

Eric Brewer

Professor, Computer Science, University of California, Berkeley

brewer@eecs.berkeley.edu**Tapan Parikh**

Associate Professor, Information School, University of California, Berkeley

parikh@ischool.berkeley.edu**Björn Hartmann**

Associate Professor, Computer Science, University of California, Berkeley

bjoern@eecs.berkeley.edu**Bill Thies**

Researcher, Microsoft Research India

thies@microsoft.com