

# Marshini Chetty

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## Education

GEORGIA INSTITUTE OF TECHNOLOGY

Atlanta, GA

Ph.D. in Human-Centered Computing, 2011

*Dissertation:* Making Infrastructure Visible: A Case Study of Home Networking

*Advisor:* Rebecca E. Grinter

*Committee:* Gregory Abowd, W. Keith Edwards, Elizabeth Mynatt (Georgia Tech)

A.J. Bernheim Brush (Microsoft Research) and Tom Rodden (University of Nottingham)

UNIVERSITY OF CAPE TOWN

Cape Town, South Africa

M.Sc. in Computer Science, 2005

*Thesis:* Developing Locally Relevant Applications for Rural South Africa: A Telemedicine Example

*Advisor:* Edwin Blake

*Awarded with Distinction*

B.Sc.(Hons) in Computer Science, 2002

*Awarded First Class*

B.Sc. in Computer Science, 2001

*Degree Awarded with Distinction with Distinctions in Computer Science and Psychology*

## Research Interests

I am a researcher in **Human Computer Interaction**. I seek to empower users via information about how they use the technological infrastructures they interact with on a daily basis. My focus is on making information visible in ways that are both accessible to the everyday user and enlightening for better managing technologies. Specifically, I have examined how to empower users in the home with respect to their *home networks*, their energy use (*sustainability*) and in situations where infrastructure may be lacking such as developing countries (*human computer interaction for development or HCI4D*).

## Employment History

- |           |  |                           |
|-----------|--|---------------------------|
| 2011–     | <b>Postdoctoral Researcher</b>   | Georgia Tech, Atlanta, GA |
|           | Working in the Pixi laboratory at the GVU center with Assoc. Prof. W. Keith Edwards. Projects include designing and evaluating tools for home network management.                          |                           |
| 2005–2011 | <b>Graduate Research Assistant</b>   | Georgia Tech, Atlanta, GA |
|           | Research assistant in the Work2Play laboratory at the GVU center. Projects include studying home network user needs and developing tools to make network information visible to end-users. |                           |



## Refereed Conference Publications

*Note:* Papers are listed in reverse chronological order.

- [1] CHETTY, M., BANKS, R., BRUSH, A. B., DONNER, J., AND GRINTER, R. “You’re Capped!” Understanding the Effects of Bandwidth Caps on Broadband Use in the Home. In *CHI 2012* (Austin, TX, USA, 2012), ACM. 23% Acceptance Rate.
- [2] CHETTY, M., HASLEM, D., BAIRD, A., OFOHA, U., SUMNER, B., AND GRINTER, R. Why Is My Internet Slow?: Making Network Speeds Visible. In *CHI 2011* (Vancouver, Canada, 2011), ACM. 26% Acceptance Rate. \*Best Paper Award (Awarded to selection of top 1% of submissions.).
- [3] WYCHE, S., SMYTH, T., CHETTY, M., AOKI, P., AND GRINTER, R. Deliberate Interactions: Characterizing Technology Use In Nairobi, Kenya. In *CHI 2010* (Atlanta, USA, 2010), ACM. 22% Acceptance Rate.
- [4] CHETTY, M., BANKS, R., HARPER, R., REGAN, T., SELLEN, A., GKANTSIDIS, C., KARAGIANNIS, T., AND KEY, P. Who’s Hogging The Bandwidth: The Consequences Of Revealing The Invisible In The Home. In *CHI 2010* (Atlanta, USA, 2010), ACM. 22% Acceptance Rate.
- [5] SHEHAN-POOLE, E., CHETTY, M., MORGAN, T., GRINTER, R., AND EDWARDS, W. Computer Help At Home: Methods And Motivations For Informal Technical Support. In *CHI 2009* (Boston, USA, 2009), ACM. 24.5% Acceptance Rate.
- [6] CHETTY, M., BERNHEIM-BRUSH, A., MEYERS, B., AND JOHNS, P. It’s Not Easy Being Green: Understanding Home Computer Power Management. In *CHI 2009* (Boston, USA, 2009), ACM. 24.5% Acceptance Rate.
- [7] SHEHAN-POOLE, E., CHETTY, M., GRINTER, R., AND EDWARDS, K. More Than Meets The Eye: Transforming The User Experience Of Home Network Management. In *DIS 2008* (Cape Town, South Africa, 2008), ACM. 32% Acceptance Rate.
- [8] CHETTY, M., TRAN, D., AND GRINTER, R. Getting To Green: Understanding Resource Consumption In The Home. In *UbiComp 2008* (Seoul, Korea, 2008), ACM. 19% Acceptance Rate.
- [9] CHETTY, M., SUNG, J., AND GRINTER, R. E. How Smart Homes Learn: The Evolution Of The Networked Home And Household. In *UbiComp 2007* (Innsbruck, Austria, 2007), Springer-Verlag. 19% Acceptance Rate.
- [10] KIENTZ, J., ARRIAGA, R., CHETTY, M., HAYES, G., RICHARDSON, J., PATEL, S., AND ABOWD, G. Grow And Know: Understanding Record-keeping Needs For The Development Of Young Children. In *CHI 2007* (San Jose, CA, 2007), ACM. 25% Acceptance Rate.
- [11] CHETTY, M., TUCKER, B., AND BLAKE, E. Telemedicine In The Eastern Cape Using VoIP Combined With A Store And Forward Approach. In *Southern African Telecommunications Networks and Applications Conference* (Cape Town, South Africa, 2004).
- [12] CHETTY, M., TUCKER, B., AND BLAKE, E. Developing Locally Relevant Software Applications for Rural Areas: A South African Example. In *SAICSIT 2004* (Cape Town, South Africa, 4-6 October 2004).
- [13] CHETTY, M., TUCKER, B., AND BLAKE, E. Using Voice Over IP To Bridge The Digital Divide - A Critical Action Research Approach. In *Southern African Telecommunications Networks and Applications Conference* (George, South Africa, 2003).
- [14] KRITIZINGER, P., CHETTY, M., LANDMAN, J., MARCONI, M., AND RYNDINA, O. ChattaBox: A Case Study In Using UML And SDL For Engineering Concurrent Communicating Software Systems. In *Southern African Telecommunications Networks and Applications Conference* (George, South Africa, 2003).

## Refereed Journal Publications

- [1] GRINTER, R., EDWARDS, W., CHETTY, M., SHEHAN-POOLE, E., SUNG, J., YANG, J., CRABTREE, A., TOLMIE, P., RODDEN, T., GREENHALGH, C., AND BENFORD., S. The Ins And

Outs Of Home Networking: The Case For Useful And Usable Domestic Networking. *ACM Trans. Computer-Human Interaction* 16, Article 8 (2009).

- [2] CHETTY, M., BLAKE, E., AND MCPHIE, E. VoIP Deregulation In South Africa: Implications For Underserved Areas. *Telecommunications Policy* 30, Issues 5-6 (2006), 332–334.

## Theses

- [1] CHETTY, M. Making Infrastructure Visible: A Case Study Of Home Networking. Ph.D. Thesis: College of Computing, Georgia Institute of Technology, USA, 2011.
- [2] CHETTY, M. Developing Locally Relevant Applications for Rural South Africa: A Telemedicine Example. Masters Thesis: Dept. of Computer Science, University of Cape Town, South Africa, 2005.

## Lightly Reviewed Publications

- [1] CHETTY, M., BANKS, R., BERNHEIM-BRUSH, A., DONNER, J., AND GRINTER, R. While The Meter Is Running: Computing In A Capped World. *Interactions* March/April (2011).
- [2] WAGSTROM, P., THOMAS, J., MARTINO, J., JONES, L., VON KAENEL, J., AND CHETTY, M. A Dive Into Online Community Properties. In *CSCW 2011 Interactive Papers* (Hangzhou, China, 2011), ACM.
- [3] CHETTY, M. Serving Up From The Internet Melting Pot. In *Transnational Times Workshop At Ubicomp 2010* (Copenhagen, Denmark, September 2010).
- [4] CHETTY, M. Remaking The Things We've Already Made: A Look At Unused Computing Equipment In The Home. In *Examining Appropriation, Re-use And Maintenance For Sustainability Workshop At CHI 2010* (Atlanta, GA, April 2010).
- [5] CHETTY, M. Contemporary Domestic Infrastructure And Technology Design. In *CHI 2009 Doctoral Colloquium* (Boston, MA, 2009), ACM.
- [6] THOMAS, J., DEARDEN, A., BEST, M., DRAY, S., LIGHT, A., CHETTY, M., KAM, M., MAUNDER, A., AND SAMBASIVAN, N. HCI for Community and International Development. In *CHI 2008* (Florence, Italy, 2008).
- [7] THOMAS, J., DEARDEN, A., BEST, M., WINSCHEIRS, S. H., CHETTY, M., KAM, M., MAUNDER, A., AND AYKLIN, N. Building an International Community: Designing Interactive Systems for Communities in the Developing World. In *DIS 2008* (Cape Town, South Africa, 2008).
- [8] CHETTY, M. Do Domestic Infrastructures Have Values? In *Ubicomp 2008 Doctoral Colloquium* (Seoul, Korea, 2008).
- [9] CHETTY, M., AND GRINTER, R. HCI4D: How Do We Design For The Global South? In *User Centered Design and International Development Workshop at CHI 2007* (San Jose, CA, April 2007).
- [10] CHETTY, M., AND GRINTER, R. HCI4D: HCI Challenges in The Global South. In *CHI 2007 Extended Abstracts* (San Jose, CA, April 2007), ACM.
- [11] BROWN, B., CHETTY, M., GRIMES, A., AND HARMON, E. Reflecting On Health: A Diet And Exercise Monitoring System For College Students. In *CHI 2006 Extended Abstracts* (Montreal, Canada, 2006), ACM.

## Selected Media

- [1] NEEDLEMAN, R. Georgia Tech Project Arms Consumers Against Restrictive ISPs. CNET News, August 2011.
- [2] BODE, K. Georgia Tech Offers Kermit Bandwidth Monitoring Tool For Those Who Find Third Party Router Firmware Daunting. *BroadbandDSLreports.com*, May 2011.
- [3] DOCTOROW, C. Kermit: See and Control the Devices Using Your Home Network. *BoingBoing*, May 2011.

- [4] ANDERSON, N. Parents, Need To Throttle Timmy's xbox While You Work From Home? *Ars Technica*, May 2011.
- [5] TERRASO, D. Kermit Helps Households Monitor and Manage Their Internet Speed. *Physorg.com*, May 2011.
- [6] BROWN, B. Experimental Broadband Management App Could Keep ISPs Honest. *Network World*, May 2011.
- [7] SAMZENPUS. App To Keep ISPs Honest About Bandwidth Caps. *Slashdot*, May 2011.
- [8] TERRASO, D. Why is My Internet Slow? *Georgia Tech Press Release*, April 2010.
- [9] CHETTY, M. Ten Thousand Villages. *Ambidextrous Magazine*, Suddenly Spring, *Stanford's Journal of Design*, Issue 3 2010.

## Unrefereed Publications

- [1] CHETTY, M., BUCKHALTER, C., BEST, M., GRINTER, R., AND GUZDIAL, M. Description Of Computer Science Higher Education In Sub-Saharan Africa: Initial Explorations. GIT-GVU-07-14 Technical Report, College of Computing, Georgia Institute of Technology, 2007.
- [2] BROWN, B., CHETTY, M., GRIMES, A., AND HARMON, E. Effortless Monitoring of Diet and Exercise for Students. Poster presented at CHI-Atlanta Student Research Competition, 2005.
- [3] CHETTY, M. A Comparison of Unified Modelling Language (UML) and Specification and Description Language (SDL). Technical Report-02-01-00, Dept. of Computer Science, University of Cape Town, 2002.

## Invited Talks

- 2012 Towards User-Centered Home Networking *HomeWork Workshop held jointly with Microsoft Research Cambridge and University of Nottingham*, Cambridge, UK, January 10, 2012.
- 2011 Making Networked Infrastructure Manageable: A Case Study of Home Networking *Max Planck Institute for Software Systems*, Kaiserslautern, Germany, November 24, 2011.
- 2011 What Are Sources of Home Network Complexity And How Can We Help Home Users To Deal With Them? *IEEE Computer Communications Workshop*, Hyannis, MA, October 11, 2011.
- 2011 Why Is My Internet Slow? Making Network Speeds Visible. *HCI lunch at Google*, Mountain View, CA, August 1, 2011.
- 2011 Why Is My Internet Slow? Making Network Speeds Visible. *Technicolor*, Palo Alto, CA, July 29, 2011.
- 2011 Why Is My Internet Slow? Making Network Speeds Visible. *Networking group in Computer Science at Stanford*, Palo Alto, CA, July 28, 2011.
- 2010 Making Infrastructure Visible in the Home: A Case Study of Home Networking. *Interaction and Experience group at Intel Labs*, Portland, November 5, 2010.
- 2010 Why Is My Internet Slow? Making Network Speeds Visible. *Department of Computer Science, University of Cape Town*, South Africa, October 7, 2010.
- 2010 The Ins and Outs of Home Networking: The Case for Useful and Usable Domestic Networking. *TOCHI journal paper presented at CHI 2010*, April 14, 2010.
- 2010 Who's Hogging The Bandwidth?: The Consequences of Revealing the Invisible in the Home. *GVU Brown Bag*, April 1, 2010.
- 2009 It's Not Easy Being Green: Understanding Home Computer Power Management. *GVU Brown Bag*, March 12, 2009.
- 2008 Getting to Green: Understanding Resource Consumption in the Home. *GVU Brown Bag*, September 11, 2008.

- 2007 How Smart Homes Learn: The Evolution of the Networked Home and Household. *GVU Brown Bag*, September 6, 2007.
- 2006 Threads for Development: Computer Education Revolutions for Sub-Saharan Africa. *GVU Brown Bag*, March 8, 2007.

## Awards and Honors

- 2011 Georgia Tech College of Computing Outstanding Graduate Research Assistant Award (*Awarded to 1 GRA in the College of Computing*)
- 2010-2011 Intel Ph.D. Fellowship. (*27 fellowships awarded nationally to top computer science researchers.*)
- 2010 Georgia Tech Research and Innovation Conference \$2000 Travel Grant (*Awarded within departments for outstanding poster presentation.*)
- 2009-2010 Georgia Tech GVU Foley Scholar Award. (*Awarded to 2 graduate students at GVU center for research excellence.*)
- 2008-2009 Georgia Tech GVU Foley Scholar Finalist.
- 2007-2008 Google Anita Borg Scholarship. (*20 scholarships awarded nationally to top women computer scientists.*)
- 2007-2008 Georgia Tech Sam Nunn Security Fellowship. (*6 fellowships awarded institute wide for scientists to engage in policy matters.*)
- 2006 Google Women of Color Scholarship to attend Grace Hopper conference.
- 2006 2nd Place at the ACM CHI Student Design Competition. (*Out of 15 competing teams*)
- 2005 Computer Science Merit Certificate for academic achievement (*Awarded to top 1% of computer science students in the department.*)
- 2005-2007 Fulbright Scholarship. (*13 scholarships awarded nationally in South Africa*)
- 2003-2004 National Research Foundation Equity scholarship (*Awarded nationally for academic achievement to cover graduate study living expenses.*)
- 2003-2004 University of Cape Town University Council bursary (*Awarded for academic achievement.*)
- 2000-2002 HSBC bursary for academic achievement. (*Awarded institute wide for academic achievement to cover full tuition and living expenses.*)
- 2001 Class Medal for CS 302F (Operating systems, databases and software engineering). (*Awarded to top student in the class.*)
- 2001 Microsoft scholarship to attend Tech Ed conference. (*Awarded to top computer science student in department.*)
- 2000 William Campbell-Pill scholarship. (*Awarded to one student institute-wide for academic achievement.*)
- 1999-2001 Dean's Merit list. (*Awarded to top 1% of students in the Sciences.*)

## Service and Other Activities

### *External*

- 2011 Program Committee, *ICTD 2012*
- 2011 Specific Applications Area Program Committee, *CHI 2012*
- 2011 Ph.D. Forum Subcommittee, *Grace Hopper Conference 2011*
- 2010 Publications Chair, *Ubicomp 2010*
- 2010 Student Volunteer, *Ubicomp 2010*

- 2009 Works In Progress Program Committee, *CHI 2009*
- 2008 Student Volunteer On-Site Co-Chair, *Ubicomp 2008*
- 2008 HCI for Community and International Development Workshop, *CHI 2008*
- 2008 Building an International Community: Designing Interactive Systems for Communities in the Developing World, *DIS 2008*
- 2004 Assistant to sub-editor for SAIEE Transactions Journal, Special Issue on Software Engineering and Formal Methods

*Reviewing*

- CHI* (2006, 2008, 2009, 2010, 2011)
- Ubicomp* (2008, 2009, 2010, 2011)
- CSCW* (2004, 2006, 2008, 2010, 2011, 2012)
- DIS* (2010)
- Grace Hopper* (2010, 2011)
- Information Visualization* (2009)
- UIST* (2008, 2011)
- IEEE Pervasive*
- Information Technologies and International Development (ITID)*

*College of Computing, Georgia Institute of Technology*

- 2010 Judge for Undergraduate Research Spring Symposium
- 2007–2008 School of Interactive Computing Representative for Graduate Student Council  
*Duties:* Liaison between School chair, faculty, and graduate students. Attended faculty meetings and had regular meetings with the school chair.
- 2007–2008 Co-Leader of Graduate Women@cc Organization  
*Duties:* Organized social and mentoring events for graduate women.
- 2007-2008 Co-Coordinator Human-Computer Interaction graduate seminar
- 2006–2008 Mentor in Women@cc Big-Little Sisters program
- 2006–2007 President of Graduate Student Council  
*Duties:* Supervised council activities, held regular meetings open to all graduate students, and liaised with school administration on behalf of graduate student matters.
- 2006–2007 Head of Graduate Student Council Travel Funds Committee  
*Duties:* Created policy for travel funds and application procedures. Oversaw first round of applications for travel grants and selected winners.
- 2006–2007 Co-coordinator of Gvu Coffee and Cookie Break

*Computer Science Department, University of Cape Town*

- 2004 Postgraduate representative for Computer Science
- 2004 Science Faculty postgraduate Students Association Member
- 2004 Treasurer ACM student chapter for University of Cape Town
- 2004 Mathematics tutor for senior high school students in Khayalitsha township with Ikamva Lesizandleni Zethu organization

2003 Postgraduate informal talks coordinator

## **Student Supervision**

Fall '11 & Spr '12 Boris du Souza, MS CS.

Sum '10, Spr '11–Fall '12 Bethany Sumner, Undergraduate CS Sophomore. (*Resulted in [1]*)

Summer 2010 Ugochi Ofoha, Undergraduate CS Senior. (*Resulted in [1]*)

Spring 2010 Andrew Baird, Undergraduate CS Senior. (*Resulted in [1]*)

2009-2010 David Haslem, Undergraduate CS Senior. (*Resulted in [1]*)

2008-2009 Jin Yao, Undergraduate CS Senior.

Fall 2008 Michael Orr, Teddy Stotis, Eric Bolten, Joshua Slaughter, Undergraduate CS Seniors.

Spr–Sum 2008 David Tran, MS CS. (*Resulted in [7]*)

Spring 2008 Shashank Raval, MS CS.

Spring 2008 Alicia Nachman, MS HCI.

Spring 2008 Ryan Cino, Adam Allred, Jared Salzman and Mary Gezo, Undergraduate CS Seniors.

Spring 2006 Ja-Young Sung, MS HCI. (*Resulted in [8]*)

**References** Available on request