

Tawanna Dillahunt

Human-Computer Interaction
School of Computer Science
Carnegie Mellon University
5000 Forbes Avenue, Newell-Simon Hall
Pittsburgh, PA 15213

tdillahu@cs.cmu.edu
<http://www.cs.cmu.edu/~tdillahu>
Mobile: 919-696-5523

Research Interests

I am interested in studying how technologies can be leveraged to motivate and to encourage pro-social behaviors. My past research has focused on interfaces that reward conservation behavior such as sensing and presenting positive feedback about green transportation choices. Currently, I am researching barriers and opportunities for saving energy in low-income communities. I have explored the impact of multi-stakeholder relationships, and socioeconomic factors on energy use. I am now developing an application to be used in low-income households designed for tenants to share knowledge and build community around energy savings.

Education

- **Ph.D., Human-Computer Interaction Institute** Carnegie Mellon University, PA
Advisor: Dr. Jennifer Mankoff, Thesis Topic: Using Social Technologies to Increase Sharing and Communication around Household Energy Consumption in Low-Income and Rental Communities, December 2012
- **M.S., Human Computer Interaction** Carnegie Mellon University, May 2011
- **M.S., Computer Science, Human-Computer Interfaces** Oregon Graduate Institute at the Oregon Health and Science University, June 2005
- **B.S., Computer Engineering**, North Carolina State University, May 2000, Magna Cum Laude

Honors & Awards

- Ford Fellowship Dissertation Competition, Honorable Mention, 2012
- IBM Ph.D. Fellowship Recipient, 2011, 2012
- Fran Allen IBM Ph.D. Fellowship, 2011
- Xerox Technical Minority Scholarship recipient, 2009-2010, 2011-2012
- National GEM Fellowship (Sponsored by Intel), 2007-2008
- Intel Business Client Group Division Recognition Award (DRA), 2005
- Intel Desktop Platform Group DRA, 2001
- National Society of Black Engineers Fellow, 1999-2000
- Eta Kappa Nu, 1999
- North Carolina State University Fellow, 1998
- NACME scholarship recipient (Sponsored by GE and IBM), 1997-2000

Teaching Experience

- HCI-05433/533-C, **User Interface Lab Instructor** (Android Mobile Development), Fall 2010, Lab Coordinator, Dr. Anind Dey
- HCI-05391 **Designing Human Centered Systems**, Spring 2010, TA for Dr. Jason Hong
- HCI-05497/05897 **Environmental Hackfest**, Spring 2010, TA for Dr. Jennifer Mankoff

Professional Experience

IBM T.J. Watson Research, Hawthorne, NY, Summer 2010

Research Intern, Social Computing Group

- Conducted a survey of existing SMS applications in emerging markets
- Built and deployed two SMS applications to explore the feasibility of deriving user preferences in mobile SMS environments
- Filed four patent disclosures, 2 patents pending, 1 published

Intel Corporation, Business Client Group, Hillsboro, OR, 2000-2007

Network Software Engineer: LAN Access Division, 2006-2007

- Implemented base driver features for the Intel Device Management Extensions (DMIX) SetupBD component/application

Professional Experience (cont...)

Intel Corporation, Business Client Group, Hillsboro, OR, 2000–2007

- Maintained the component responsible for uninstallation (PROUnstl)
- Managed the deployment of the package application for components

Software Validation Lead: User-Centered Platform Solutions Division, 2005–2006

- Created software test plans and software test descriptors
- Communicated weekly test matrices and validation indicators
- Held weekly bug scrubs, responsible for completion of readiness criteria, and led up to three technicians and contractors to ensure proper validation of the Intel Integrator Toolkit Framework Edition 2.10 product
- Led transition of ITK product validation to Kulim, Malaysia

Software Engineer: User-Centered Platform Solutions Division, 2000–2005

- Software developer for the following Intel® Desktop board products: Intel Integrator Toolkit, (ITK for Windows, Windows PE, and DOS), the Intel Desktop Control Center (IDCC) and the Intel Viiv software installer implementing various software components

General Electric Lighting, Nela Park, OH, 1999

Network Summer Intern: Global Infrastructure

- Created segment utilization and LAN segment health reports to gather data (i.e., network peak time usage, minimum time usage and outages and to help further improve the network)

IBM, Research Triangle Park, NC, 1996–1998

Inroads Summer Intern: Networking Hardware Division, 1998

- Created OS drive images for a PC download tool to help automate Token Ring Adapter testing
- Simulated various components of ATM adapters using a Lattice software application tool
- Performed adapter testing using analyzers and scopes as outlined in test plans
- Soldered, debugged, and populated adapters to ensure defects were not true hardware defects

Inroads Summer Intern: Networking Software Division, 1996, 1997

- Provided hardware support for Translation Verification Process testing (XVT)
- Tested accuracy of IBM Personal Communications software test plans for XVT
- Setup and configured platforms and software for 15 different countries
- Coded small program for Team Installation group
- Attended IBM classes in C++ and HTML

Skills

- **Programming Experience:** C, C++, Java, Web Application Development using Java Servlets under Apache Tomcat, Python, Android, some PHP
- **HCI Methods:** Qualitative (Interviews, photo-elicitation studies, surveys, observations), Grounded-Theory (coding themes from transcribed data), Wizard of Oz, Focus Groups, Participatory Design
- **Mobile Platforms:** Nokia, Android
- **Physical Prototyping:** Arduino
- **Operating Systems:** OSX, Windows

Academic Service

- HCII Mentor to incoming PhD students, 2010–2012
- ACM CHI Conference Reviewer, 2008–2011
- ACM CHI Student Volunteer 2011, 2008
- FLAIRS PC Member 2011
- Fusion Forum Panelist for undergraduate program for underrepresented minorities interested in graduate school, 2007–2010
- IEEE Pervasive Computing Reviewer, 2009–2010
- InfoVis Conference Reviewer, 2009

Outreach

- Pennsylvania Junior Academy of Science Judge, 2010
- Housing Authority of the City of Pittsburgh Clean Slate Panelist, 2009
- Volunteer for Fostering Academic and Social Achievement (F.A.S.A.) Summer Media Technology Project, 2009
- National Society of Black Engineers, Portland Alumni Chapter, Treasurer, 2005-2006
- Intel, Volunteer (Oregon Food Bank, University Park Community Center, CLICK), 2000-2007

Publications, Workshops, Posters and Talks

Peer-reviewed Conference Papers

Dillahunt, T., Mankoff, J., Paulos, E. Understanding conflict between landlords and tenants: Implications for energy sensing and feedback. Proceedings of the 11th international conference on Ubiquitous computing, 2010. pp. 149-158.

[**Acceptance Rate: 19.3%**]

Mankoff, J., Fussell, S., **Dillahunt, T.**, Graves, Rachel, Grevet, C., Johnson, M., Matthews, D., Matthews, H.S., McGuire, R., Thompson, R. StepGreen.org: Increasing energy saving behaviors via social networks. ICWSM 2010. [**Acceptance Rate: 19%**]

Dillahunt, T., Mankoff, J., Paulos, E., Fussell, S. It's not all about green: energy use in low-income communities. Proceedings of the 11th international conference on Ubiquitous computing, 2009. pp. 255-264. [**Acceptance Rate: 12.9%**]

Froehlich, J., **Dillahunt, T.**, Klansja, P., Mankoff, J., Consolvo, S., Harrison, B., Landay, J. UbiGreen: investigating a mobile tool for tracking and supporting green transportation habits. Proceedings of the 27th international conference on Human factors in computing systems, 2009. pp. 1043-1052. [**Acceptance Rate: 24%**]

Lee, M., **Dillahunt, T.**, Pendleton, B., Kraut, R., Kiesler, S. Tailoring websites to increase contributions to online communities. Extended abstracts on Human factors in computing systems, 2009. pp. 4003-4008.

Technical Reports

Dillahunt, T. (2012). Using social technologies to increase sharing and communication around household energy consumption in low-income and rental communities. CMU-HCII-12-107, SCS Carnegie Mellon University, Human-Computer Interaction Institute Collection.

Dillahunt, T., Mankoff, J. (2012). Design implications for social-energy applications. CMU-HCII-12-100, SCS, Carnegie Mellon University, Human-Computer Interaction Institute Collection.

Doctoral Consortia

Dillahunt, T. (2011) "Sharing and communication around household energy consumption" Richard Tapia Doctoral Consortium. San Francisco, CA. April 2, 2011.

Dillahunt, T. (2011) "Communicating around home-energy monitoring devices: Connecting stakeholders in low-income communities" Doctoral Colloquium in the Adjunct Proceedings of UbiComp 2011, Beijing, China, September 17 - September 21, 2011.

Workshop Papers

Dillahunt, T., Mankoff, J., Forlizzi, J. A proposed framework for assessing environmental sustainability in the HCI community. CHI '10 Examining appropriation, reuse, and maintenance workshop at CHI 2010 in Atlanta, GA.

Dillahunt, T., Becker, G., Mankoff, J., Kraut, R. Motivating environmentally sustainable behavior changes with a virtual polar bear. Pervasive 2008 Workshop on Pervasive Persuasive Technology and Environmental Sustainability in Sydney, Australia.

Posters

Dillahunt, T., Mankoff, J., Thompson, R. (2010) "Using web 2.0 technologies to encourage environmental behavior: What we know, what we don't know, and what we wish we knew!" Behavior, Energy, and Climate Change Conference. Sacramento, CA. November 14 - November 17, 2010.

Dillahunt, T., Mankoff, J., Paulos, E., Fussell, S. (2009) "Factors affecting energy use in low-income households" Behavior, Energy, and Climate Change Conference. Washington, DC. November 15 - November 18, 2009.

Invited Talks and Articles

Dillahunt, T. (2012). "Social sharing and engagement around community energy monitoring." Behavior, Energy & Climate Change Conference, Sacramento, CA, November 11-14, 2012.

Dillahunt, T., Mankoff, J., Paulos, E. (2012). "Understanding conflict between landlords and tenants: Implications for energy sensing and feedback." Urban Affairs Association 42nd Annual Conference, Pittsburgh, PA, April 28-21, 2012.

Dillahunt, T., Mankoff, J. 2011. In the dark, out in the cold. XRDS 17, 4 (June 2011), 39-41. DOI=10.1145/1961678.1961685 <http://doi.acm.org/10.1145/1961678.1961685>

Dillahunt, T. (2011) "It's not all about 'green': Energy use in low-income communities". National Energy and Utility Affordability Conference, Fort Lauderdale, FL, June 27 - June 29, 2011.

Dillahunt, T. (2011) "Designing technologies for energy-related landlord/tenant conflicts" Interdisciplinary Cluster on Energy Systems, Equity and Vulnerability (InCluESEV), Durham, NC, October 6 - October 8, 2011.

Patents

United States Patent: 13/173,765

Title: System and Method for Generating a Location-Aware Preference and Restriction-Based Customized Menu

Inventors: **Tawanna Dillahunt**, Peter Malkin, Mark N. Wegman

Assignee: IBM Research

YOR920100693US1

Patent Pending

Title: Data Session Preferences

Inventors: **Tawanna Dillahunt**, Peter Malkin

Assignee: IBM Research

YOR920100666US1

Patent Pending

Title: Data Session Preferences

Inventors: **Tawanna Dillahunt**, Jason B. Ellis, Robert G. Farrell

Assignee: IBM Research