

Amanda Lee Hughes

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Computer Science Department

Utah State University

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EDUCATION

Ph.D. in Computer Science (2012)

University of Colorado Boulder

Dissertation: Supporting the Social Media Needs of Emergency Public Information Officers with Human-Centered Design and Development

Committee: Leysia Palen (chair), Ken Anderson, Clayton Lewis, Michael Muller, Katie Siek

M.E. in Computer Science (2006)

University of Colorado Boulder

B.S. in Computer Science & Music Minor (2000)

Brigham Young University

RESEARCH INTERESTS

Human-computer interaction (HCI); human-centered computing (HCC); computer supported cooperative work (CSCW); participatory design; social analysis of information & communication technology; crisis informatics; mobile technologies

HONORS AND AWARDS

CSST Summer Research Institute 2015, Team Participant, competitively selected with expenses paid

ISCRAM 2015 Distinguished Service Award

USU Computer Science Department 2015 Service of the Year Award

CSST Summer Research Institute 2013, Individual Participant, competitively selected with expenses paid

CSCW 2010 Nominated for "Best of CSCW" paper award

CSCW 2008 Doctoral Consortium travel & support grant

ISCRAM 2008 Conference Best Student Paper award

Awards to Hughes' Students

Best Student Paper Nomination to Apoorva Chauhan (Hughes is a co-author) at ISCRAM2016

Best Master's Thesis in the USU CS Department for the 2015-2016 AY to Shantanu Saxena

Engineering Undergraduate Research Program Award to Brad Richardson

RESEARCH GRANTS & AWARDS

Global Disaster Preparedness Center (2015-2016)

First Aid Application Review

Principal Investigator: Trilateral Research. Co-PIs: Utah State University (Amanda Hughes), Fraunhofer Institute for Open Communication Systems, Asian Disaster Preparedness Center.

Total \$77,000 – USU portion \$14,260

RESEARCH AND TEACHING EXPERIENCE

Assistant Professor, Computer Science Department, Utah State University. July 2013 – present

- Develop a research program and write peer-reviewed publications of research results
- Teach core CS courses as well as courses in area of expertise (Human Computer Interaction)
- Advise and mentor students

Postdoc Researcher, EPIC Lab (Empowering the Public with Information in Crisis). Jan-June 2013

- Deliver multi-media presentations and write peer-reviewed publications of research results

- Advise and mentor junior research group members

Research Assistant, EPIC Lab (*Empowering the Public with Information in Crisis*). 2007 – 2012

- Conduct qualitative and quantitative research to understand socio-technical aspects of social media
- Collect and analyze large social media data sets
- Plan and conduct participatory design workshops and user experience testing sessions
- Prototype solutions for improving social media use (Javascript, Perl, PHP, HTML, Web Apps)
- Deliver multi-media presentations and write peer-reviewed publications of research results
- Advise and mentor junior research group members

Graduate Teaching Assistant, University of Colorado Boulder. 2007-2008

CSCI 5828 – Foundations of Software Engineering

CSCI 6838 – User Interface Design

Computer Science Teaching Assistant, Brigham Young University. 1999-2000

CS 380 – Computer Architecture

CS 130 – C Programming

PROFESSIONAL EXPERIENCE

Member of Technical Staff, Avaya. 2001-2007

- Develop large-scale telephony systems in C/C++ (10M+ lines of code)
- Prototype and build management applications (Java, Javascript, Flex, MySQL, J2EE, HTML)
- Experience with the full development cycle: requirements, development, project management, testing, documentation

Technical Intern, Novell. 2000

- Test Novell's Internet Caching System
- Develop tools to automate testing and testing reporting process (PHP, MySQL, Delphi)

PUBLICATIONS (*Asterisks indicate student collaborators*)

Refereed Journal Articles

Said, Maurice, Amanda L. Hughes, Susan Anson, Hayley Watson, Michael Klafft, Karin Metz and Eridy Lukau (2017). Understanding Cross-Cultural Adoption of a First Aid App. *Health and Technology*, 1–9. <https://doi.org/10.1007/s12553-017-0187-1>

Sleipness, Ole R., Benjamin H. George, Amanda L. Hughes and Sriram Ramineni* (2016). Hidden Dimensions: Illuminating Landscape History through Mobile Apps. *Journal of Digital Landscape Architecture*, 1, pp. 273-280.

Hughes, Amanda L. and Andrea H. Tapia (2015). Social Media in Crisis: When Professional Responders Meet Digital Volunteers. *Journal of Homeland Security and Emergency Management*, 12 (3), pp. 679-706.

Hughes, Amanda L. and Leysia Palen (2012). The Evolving Role of the Public Information Officer: An Examination of Social Media in Emergency Management. *Journal of Homeland Security and Emergency Management*, 9 (1). ISSN (Online) 1547-7355, DOI:10.1515/1547-7355.1976, June 2012.

Hughes, Amanda L. and Leysia Palen (2009). Twitter Adoption and Use in Mass Convergence and Emergency Events. *International Journal of Emergency Management*, 6 (3/4), pp. 248-260.

Palen, Leysia, Sarah Vieweg, Sophia B. Liu, and Amanda Hughes. (2009). Crisis in a Networked World: Features of Computer-Mediated Communication in the April 16, 2007 Virginia Tech Event. *Social Science Computer Review*, Sage, 27 (4), pp. 467-480.

Palen, Leysia and Amanda Hughes (2007). When Home Base Is Not a Place: Parents' Use of Mobile Telephones. *Personal and Ubiquitous Computing Journal*, Springer, 11 (5), pp. 338 -348.

Refereed Conference Publications

- Chauhan, Apoorva* and Amanda L. Hughes (to appear 2017). Providing Online Crisis Information: An Analysis of Official Sources during the 2014 Carlton Complex Wildfire. In *Proceedings of the 35th International Conference on Human Factors in Computing Systems (CHI 2017)*. ACM, NY, <http://dx.doi.org/10.1145/3025453.3025627>.
- Hughes, Amanda L. and Rohan Shah* (2016). Designing an Application for Social Media Needs in Emergency Public Information Work. In *Proceedings of the 19th International Conference on Supporting Group Work (GROUP 2016)*. ACM, NY, pp. 399-408. (**%28 acceptance rate**)
- Klafft, Michael, Maurice Said, Susan Anson, Hayley Watson, Amanda L. Hughes and Eridy Lukau (2016). Challenges in Designing and Distributing a Not For Profit First Aid App Worldwide. In Heinrich C. Mayr & Martin Pinzger (Eds.) *Lecture Notes in Informatics, INFORMATIK 2016*, Bonn: Gesellschaft für Informatik. Volume P-259, pp. 1745-1758.
- Chauhan, Apoorva* and Amanda L. Hughes (2016). Online Mentioning Behavior during Hurricane Sandy: References, Recommendations, and Rebroadcasts. In *Proceedings of the 2016 Information Systems for Crisis Response and Management Conference (ISCRAM 2016)*. (**Best student paper nomination**)
- Hughes, Amanda L. and Apoorva Chauhan* (2015). Online Media as a Means to Affect Public Trust in Emergency Responders. In *Proceedings of the 2015 Information Systems for Crisis Response and Management Conference (ISCRAM 2015)*.
- Chauhan, Apoorva* and Amanda L. Hughes (2015). Facebook and Twitter Adoption by Hurricane Sandy-affected Police and Fire Departments. In *Proceedings of the 2015 Information Systems for Crisis Response and Management Conference (ISCRAM 2015)*.
- Hughes, Amanda L., Lise A. St. Denis, Leysia Palen and Kenneth M. Anderson (2014). Online Public Communications by Police & Fire Services during the 2012 Hurricane Sandy. In *Proceedings of the 32nd International Conference on Human Factors in Computing Systems (CHI 2014)*. ACM, NY, pp. 1505-1514. (**%23 acceptance rate**)
- Hughes, Amanda L. (2014). Participatory Design for the Social Media Needs of Emergency Public Information Officers. In *Proceedings of the 2014 Information Systems for Crisis Response and Management Conference (ISCRAM 2014)*.
- St. Denis, Lise A., Amanda L. Hughes and Leysia Palen (2012). Trial by Fire: The Deployment of Trusted Digital Volunteers in the 2011 Shadow Lake Fire. In *Proceedings of the Information Systems for Crisis Response and Management Conference (ISCRAM 2012)*.
- Starbird, Kate, Leysia Palen, Amanda L. Hughes, and Sarah Vieweg (2010). Chatter on the Red: What Hazards Threat Reveals about the Social Life of Microblogged Information. In *Proceedings of the 2010 Conference on Computer Supported Cooperative Work (CSCW 2010)*. ACM, NY, pp. 241-250. (**%20 acceptance rate. Honorable Mention for “Best of CSCW,” top 5%**)
- Vieweg, Sarah, Amanda Hughes, Kate Starbird, Leysia Palen (2010). Microblogging During Two Natural Hazards Events: What Twitter May Contribute to Situational Awareness. In *Proceedings of the 28th International Conference on Human Factors in Computing Systems (CHI 2010)*. ACM, NY, pp. 1079-1088. (**%22 acceptance rate**)
- Hughes, Amanda and Leysia Palen (2009). Twitter Adoption and Use in Mass Convergence and Emergency Events. *Proceedings of the 2009 Information Systems for Crisis Response and Management Conference (ISCRAM 2009)*, Gothenberg, Sweden, (~5000 words) Available at: http://www.iscram.org/ISCRAM2009/papers/Contributions/211_Twitter%20Adoption%20and%20Use%20in%20Mass%20Convergence_Hughes2009.pdf <Paper republished as Journal and in above listings>.
- Hughes, Amanda, Leysia Palen, Jeanette Sutton, Sophia Liu, and Sarah Vieweg (2008). “Site-Seeing” in Disaster: An Examination of On-Line Social Convergence. *Proceedings of the 2008 ISCRAM Conference*, Washington, DC, pp. 324-333. (**Tied for best student paper award**)

- Vieweg, Sarah, Leysia Palen, Sophia Liu, Amanda Hughes, and Jeannette Sutton (2008). Collective Intelligence in Disaster: Examination of the Phenomenon in the Aftermath of the 2007 Virginia Tech Shooting. *Proceedings of the 2008 ISCRAM Conference*, Washington, DC, pp. 44-54. **(Tied for best student paper award)**
- Liu, Sophia, Leysia Palen, Jeanette Sutton, Amanda Hughes, and Sarah Vieweg (2008). In Search of the Bigger Picture: The Emergent Role of On-Line Photo Sharing in Times of Disaster. *Proceedings of the 2008 ISCRAM Conference*, Washington, DC, pp. 140-149. **(Tied for best student paper award)**
- Palen, Leysia, Sarah Vieweg, Jeanette Sutton, Sophia Liu, and Amanda Hughes (2007). Crisis Informatics: Studying Crisis in a Networked World. *Proceedings of the Third International Conference on E-Social Science*, Ann Arbor, MI, Oct 7-9, 2007 (on-line proceedings; 10 pages).

Peer-Reviewed Works

- Hughes, Amanda L. (2016). Ethical Challenges of Working with Social Media Data around Crisis Events. Presented at the *Ethics and Obligations for Studying Digital Communities Workshop at the Conference on Supporting Group Work (GROUPE 2016)*, Sanibel Island, FL.
- Hughes, Amanda L., Kate Starbird, Alex Leavitt, Brian Keegan, and Bryan Semaan (2016). Information Movement Across Social Media Platforms During Crisis Events. Workshop Position Paper. Presented at the *Following User Pathways: Cross Platform and Mixed Methods Analysis in Social Media Studies Workshop at the 2016 Conference on Human Factors in Computing Systems (CHI 2016)*, San Jose, CA.
- Sleipness, Ole R., Benjamin H. George, Amanda L. Hughes and Sri Ram Ramineni (2016). Hidden Dimensions: Illuminating landscape history through mobile apps. Published Abstract. *Proceedings of the 2016 Digital Landscape Architecture Conference*. Istanbul, Turkey.
- Hughes, Amanda L., Benjamin H. George, Ole R. Sleipness, and Sri Ram Ramineni (2016). Hidden History: Using Digital Tools to Discover the Historical Landscape Around Us. Published Abstract. *Proceedings of the 2016 Council of Educators in Landscape Architecture Annual Conference*. Salt Lake City, UT.

Technical Reports

- Trilateral Research, Fraunhofer Institute for Open Communication Systems, Utah State University (Amanda L. Hughes), and the Asian Disaster Preparedness Centre (2016). Comparative Review of the First Aid App. *Final Report to the Global Disaster Preparedness Center*. <http://preparecenter.org/resources/comparative-review-first-aid-app>.
- Trilateral Research, Fraunhofer Institute for Open Communication Systems, Utah State University (Amanda L. Hughes), and the Asian Disaster Preparedness Centre (2016). Briefing Note: Comparative Review of the First Aid App. *Briefing Note to the Global Disaster Preparedness Center*. <http://preparecenter.org/resources/briefing-note-comparative-review-first-aid-app>.
- Trilateral Research, Fraunhofer Institute for Open Communication Systems, Utah State University (Amanda L. Hughes), and the Asian Disaster Preparedness Centre (2016). Comparative Review of the First Aid App: Full Country Reports. *Final Report to the Global Disaster Preparedness Center*.

Book Chapters and Invited Publications

- Hughes, Amanda L., Steve Peterson, and Leysia Palen (2014). Social Media in Emergency Management. In *Issues in Disaster Science and Management: A Critical Dialogue Between Scientists and Emergency Managers*, (Eds) J.E. Trainor and T. Subbio. FEMA in Higher Education Program.
- Starbird, Kate, Leysia Palen, Sophia B. Liu, Sarah Vieweg, Amanda Hughes, Aaron Schram, Kenneth Mark Anderson, Mossaab Bagdouri, Joanne White, Casey McTaggart, and Chris Schenk (2012). Promoting Structured Data in Citizen Communications during Disaster Response: An Account of Strategies for Diffusion of the “Tweak the Tweet” Syntax. In Christine Hagar (Ed) *Crisis Information Management: Communication and Technologies*, Chandos Publishing, pp. 43-63.

- Palen, Leysia, Kate Starbird, Sarah Vieweg, and Amanda Hughes (2010). Twitter-based Information Distribution During the 2009 Red River Valley Flood Threat. *Bulletin of the American Society for Information Science and Technology*, 36 (5), pp. 13-17.
- Liu, Sophia, Leysia Palen, Jeanette Sutton, Amanda Hughes, and Sarah Vieweg (2009). Citizen Photojournalism During Crisis Events. In Stuart Allen and Einar Thorsen (Eds), *Citizen Journalism: Global Perspectives*, Peter Lang Publishing Group, New York, pp. 43-63.

Presentations & Panels

- “Site-Seeing in Disaster: Revisiting Online Social Convergence a Decade Later.” *Crisis Communication & New Media: New Agendas in Communication Workshop*. April 2017. Invited talk.
- “Social Media for Building Safer Communities – An Evidence-Based Discussion.” A panel organized by the Office of Justice Programs Diagnostic Center and presented as the 2017 Social Media the Internet and Law Enforcement (SMILE) Conference. April 2017. Invited panelist.
- “Crisis Informatics” BYU Information Technology Program Colloquium. March 2017. Invited talk.
- “Crisis Informatics & Designing Applications for Social Media Needs in Emergency Public Information Work.” Professor Derek Hansen’s (Information Technology Program at BYU) Web and Social Media Analytics Course. November 2016. Invited guest lecture.
- “Crisis Informatics & Designing Applications for Social Media Needs in Emergency Public Information Work.” Professor Derek Hansen’s (Information Technology Program at BYU) Web and Social Media Analytics Course. November 2016. Invited guest lecture.
- “Designing an Application for Social Media Needs in Emergency Public Information Work.” *The 19th International Conference on Supporting Group Work (GROUP 2016)*, November 2016.
- “Supporting Emergency Responder Social Media Needs with Human-Centered Methods.” *Social Web for Disaster Management (SWDM) Workshop at the Conference for Information Knowledge Management (CIKM) 2016*, October 2016. Invited keynote talk.
- “Hidden History: Using Digital Tools to Discover the Historical Landscape Around Us.” *2016 Council of Educators in Landscape Architecture Annual Conference*. April 2016.
- “Crisis Informatics.” Professor Peter Howe’s (Department of Environment & Society at USU) *Natural Hazards Graduate Course*. February 2016. Invited guest lecture.
- “Facebook and Twitter Adoption by Hurricane Sandy-affected Police and Fire Departments” *Information Systems for Crisis Response and Management (ISCRAM)*, May 2015.
- “Online Media as a Means to Affect Public Trust in Emergency Responders” *Information Systems for Crisis Response and Management (ISCRAM)*, May 2015.
- “When Professional Practice Meets Civic Participation: Supporting Emergency Response with Social Media” *Ridenour Faculty Fellowship Conference*. Arlington, Virginia. October, 2014. Invited talk.
- “Participatory Design for the Social Media Needs of Emergency Public Information Officers”. *Information Systems for Crisis Response and Management (ISCRAM)*, May 2014.
- “Online Public Communications by Police & Fire Services during the 2012 Hurricane Sandy”. *International Conference on Human Factors in Computing Systems (CHI)*. May 2014.
- “Social Media in Emergency Management”. *Utah State University College of Engineering Advisory Board Meeting*, November 2013. Invited talk.
- “Public Information Officer Work and Social Media”. Undergraduate Course at University of Colorado Boulder: *Social Media for Social Good during Crisis*, June 2011.
- “Twitter Adoption and Use in Mass Convergence and Emergency Events”. *Information Systems for Crisis Response and Management (ISCRAM)*, May 2009.

“Supporting Sensemaking Activity by Members of the Public in Crisis Events”. *Computer Supported Cooperative Work (CSCW) Doctoral Colloquium*, November 2008.

“Site-Seeing’ in Disaster: An Examination of On-Line Social Convergence”. *Information Systems for Crisis Response and Management (ISCRAM)*, May 2008.

“Crisis Web Portal: Making Sense of On-line Disaster Activity”. *Information Systems for Crisis Response and Management (ISCRAM) Doctoral Colloquium*, May 2008.

“Crisis Web Portal: Creating a Picture of On-line Disaster Activity”. *Colorado Celebration of Women in Computing (CCWIC)*, April 2008.

Posters

Chauhan, Apoorva* and Amanda L. Hughes (2017). Online Event Based Resources around the 2016 Fort McMurray Wildfire. *USU Research Week*, April 2017.

Kay, Aaron*, Chong Li*, Aditya Mehra*, Anand Bora*, Vinay Chhodavadiya*, and Amanda L. Hughes (2016). PALS: Personalized Accessibility Living System for the Elderly. *USU Computer Science Industry Day*, April 2016. *USU Research Week*, April 2016.

Chauhan, Apoorva*, Dale Flamm*, James Nickerson*, Sarbajit Mukherjee*, and Amanda L. Hughes (2016). Haptic Guidance for Persons with Visual Impairment during Crisis Evacuations. *USU Computer Science Industry Day*, April 2016.

Chauhan, Apoorva* and Amanda L. Hughes (2016). Online Dissemination of Official Information - The 2014 Carlton Complex Wildfires. *USU Computer Science Industry Day*, April 2016. *USU Research Week*, April 2016.

Kay, Aaron*, Shantanu Saxena*, Meet Rajdev* and Amanda L. Hughes (2015). 'To Do: Improve' App Prototype. *USU Computer Science Industry Day*, April 2015.

Chauhan, Apoorva* and Amanda L. Hughes (2015). Online Trust-Building Recommendations for Emergency Responders. *USU Computer Science Industry Day*, April 2015.

Hughes, Amanda L. (2008). Supporting Sensemaking Activity by Members of the Public in Crisis Events. *Computer Supported Cooperative Work (CSCW) Doctoral Colloquium*, November 2008.

Hughes, Amanda L. (2008). Crisis Web Portal: Making Sense of On-line Disaster Activity. *Information Systems for Crisis Response and Management (ISCRAM) Doctoral Colloquium*, May 2008. *Natural Hazards Workshop*, July 2008. *Grace Hopper Celebration*, October 2008.

TEACHING

Courses

Advanced Topics in Human Computer Interaction (CS 7910)

Fall 2015, Graduate Project Course

Utah State University

Introduction to Software Engineering (CS 3450)

Spring 2015-2017, Undergraduate Course

Utah State University

Introduction to Computer Science (CS 1400)

Spring 2014 & 2015, Undergraduate Course

Utah State University

Human Centered Design (CS 6450)

Fall 2013, 2014 & 2016, Graduate Project Course

Utah State University

Advising

Masters Thesis Graduates

Apoorva Chauhan, Computer Science, Plan A Masters, Graduated Fall 2014

MS Thesis: *Online Media Use and Adoption by Hurricane Sandy Affected Fire and Police Departments*

Sravani Mamidi, Computer Science, Plan B Masters, Graduated Spring 2015

MS Report: *Crisis Social Media Trainer*

Rohan Shah, Computer Science, Plan A Masters, Graduated Summer 2015

MS Thesis: *Improving the Scalability and Usability of the Public Information Officer Monitoring Application*

Shantanu Saxena, Computer Science, Plan A Masters, Graduated Spring 2016

MS Thesis: *MotionScan: Towards Brain Concussion Detection with a Mobile Tablet Device (Best Master's thesis award in the USU CS Department for the 2015-2016 AY)*

Sri Ram Ramineni, Computer Science, Plan A Masters, Graduated Summer 2016

MS Thesis: *Hidden History: A Mobile Application for Discovering Surrounding Landscapes*

PhD Thesis Graduates

Steena Monteiro, Computer Science, Graduated Fall 2016

PhD Thesis: *Statistical methods to model and optimize performance of numerically intensive, scientific computing workloads*

Current PhD Advisees

Apoorva Chauhan, Computer Science

Aaron Kay, Computer Science

Current Masters Advisees

Arshdeep Singh, Computer Science

Current Undergraduate Advisees

Brad Richardson, Computer Science

Member of Dissertation/Thesis Committee

Aditya Mehra, Computer Science, Plan A Masters

Thanh Dac Tran, Computer Science, Ph.D. student

Jared Barneck, Computer Science, Plan A Masters

Nawaf Alsrehin, Computer Science, Ph.D. student (Completed May 2016)

Meet Rajdev, Computer Science, Plan A Masters (Completed June 2015)

Jinwook Chung, Computer Science, Plan A Masters (Completed May 2015)

SERVICE

Committees & Boards

- Member of the Working Group for Emergency Alert Platforms reporting to the FCC (2016)
- Editorial Review Board Member, International Journal of Information Systems on Crisis Response and Management, IGI publishers (2016-present)
- College of Engineering Innovation Center Committee (2016-present)
- Secretary for the ISCRAM Board of Directors – elected position (2015-present)
- USU CS Annual Evaluation Committee (2014-present)
- Engineering Undergraduate Research Program (EURP) Committee (2013-present)
- USU CS Department ABET Accreditation Committee (2013-present)
- CU CS Department Executive Committee (2008-2009)

Program Committees

- CHI 2017 Program Committee – Associate Chair
- ISCRAM 2016 Co-chair for the Social Media Studies Track
- ISCRAM 2015 Papers Co-chair (also track co-chair and doctoral colloquium faculty mentor)
- iConference 2015 Program Committee
- ISCRAM 2014 Program Committee (track co-chair and doctoral colloquium faculty mentor)

Reviewing (on-going annually for these venues)

- NSF Panel Reviewer & Adhoc Reviewer
- ACM Conference on Designing Interactive Systems (DIS)
- ACM Conference on Computer Supported Cooperative Work (CSCW)
- ACM Conference on Human Factors in Computing Systems (CHI)
- ACM TOCHI Journal
- Information Systems for Crisis Response and Management Conference (ISCRAM)
- Hawaii International Conference on System Sciences (HICSS)
- Journal of Homeland Security and Emergency Management (JHSEM)
- Internet Future Journal
- NCWIT Aspirations in Computing Award
- iConference
- Cases in Public Health Communication & Marketing
- IEEE Pervasive Computing
- Journal of Computer Supported Cooperative Work (JCSCW)

Student Volunteer

- CSCW 2006, CCWIC 2008, ISCRAM 2008, Natural Hazards Workshop 2008, GHC 2008