Mario Barrenechea, PhD - Curriculum Vitae

Contact Information

Mario Barrenechea
676 Walden Circle
Boulder, CO 80305
USA

mobile: +1-508-904-7750
email: mbarrenecheajr@gmail.com
website: http://www.mbarrenecheajr.com

Overview

I am a Ph.D. researcher in computer science working at the intersection of software engineering, human-computer interaction, social computing, and crowdwork. My research work involves the human-centered design, development, and validation of software systems and tools in various application domains, such as crisis informatics and big data analytics. I am seeking computer science research and development opportunities in academic, government, and industrial settings.

Research Goal

To support and increase understanding of software engineering as a socio-technical process in order to build higher quality and more usable software in the future

Research Interests

Human-centered software engineering, human-computer interaction, crowdwork, software infrastructural design, user-centered design

Education

The University of Colorado at Boulder, Boulder, CO USA

Ph.D.,Department of Computer Science. May 2016

- Advisor: Professor Kenneth Anderson
- Area of Study: Software Engineering
- Dissertation: "The Crowdrouter Framework: Addressing Issues of Software Design in Support of Crowdwork."
- Research Groups: Project EPIC (Empowering the Public with Information in Crisis)

The University of Massachusetts at Amherst,Amherst, MA USA

B.S., Department of Computer Science, May 2011

- *Cum Laude*, With Commonwealth College Honors
- Thesis: "Visualization of Process Guidance"
- Advisors: Lori A. Clarke and Leon J. Osterweil
- Research Group: LASER (Laboratory for Advanced Software Engineering Research)

Accepted Papers

Barrenechea, M., Anderson, K. M., Aydin, A., Hakeem, M., Jambi, S. (2016). Getting the Query Right: Design Issues for Web-Based Analysis Environments. Journal of Web Engineering (JWE) 2016. **In Submission**

Barrenechea, M., Anderson, K. M., Aydin, A., Hakeem, M., Jambi, S. (2015). Getting the Query Right: User Interface Design for Data Analytics Platforms Supporting Crisis Informatics Research. ICWE 2015, Rotterdam, The Netherlands. **Best Paper Nomination**

Palen, L., Soden, R., Anderson, T. J., Barrenechea, M. (2015). Success and Scale in a Data-Producing Organization: The Socio-Technical Evolution of OpenStreetMap in Response to Humanitarian Events. CHI2015, Seoul, South Korea.

Barrenechea, M., Anderson, K. M., Palen, L., White, J. (2015). Engineering Crowdwork for Disaster Events: The Human-Centered Development of a Lost-and-Found Tasking Environment. In Proceedings of the 48th Annual Hawaiian International Conference on System Sciences (pp. 182 191). doi:10.1109/HICSS.2015.31

Anderson, K. M., Aydin, A. A., Barrenechea, M., Cardenas, A., Hakeem, M., Jambi, S. (2015). Design Challenges / Solutions for Environments Supporting the Analysis of Social Media Data in Crisis Informatics Research. In Proceedings of the 48th Annual Hawaiian International Conference on System Sciences (pp. 163 - 172). doi:10.1109/HICSS.2015.29. **Best Paper Nomination**

Barrenechea, M., Barron, J., White, J. (2012). No place like home: pet-to-family reunification after disaster. Proceedings of the 2012 ACM annual conference extended abstracts on Human Factors in Computing Systems.

Talks

- June, 2015: "Getting the Query Right: User Interface Design for Data Analytics Platforms Supporting Crisis Informatics Research"
- January, 2015: "Engineering Crowdwork for Disaster Events: The Human-centered Development of a Lost-and-Found Tasking Environment"
- January, 2013. CUBoulder Graduate Student Colloquium: "Engineering for Disaster Management: A Human-centered Software Process for Designing and Developing Interactive Systems for Mass Emergency Events"
- September, December 2012. CSCI 1000 - Freshmen Engineering Seminar: "Discovering More: CS Research"
- November, 2011. CSCI 3308 - Software Methods and Tools: "Software Engineering in the Medical Domain"
- May, 2011. Undergraduate Senior Thesis at LASER: "Visualization of Process Guidance".

Teaching Experience

CSCI 3308 - Software Methods and Tools - Teaching Assistant, Fall 2011
- Guest Lectured "Software Engineering in the Medical Domain"

CSCI 1300 - Introduction to Programming - Teaching Assistant, Spring 2012

Software Projects

The Crowdrouter is an open-source, developer-friendly web framework for designing crowdwork systems. It turns to object-oriented principles to support developers in designing tasks and workflows for the crowd. The Crowdrouter provides task sequencing, branching, and crowd statistics reporting, as well as easy integration into various web development frameworks for Python.

EmergencyPetMatcher (EPM) is a web application specially designed for reporting, matching, and voting on lost and found pets as a collaborative activity during a disaster event. The increasing convergence of digital volunteers as pet advocates are performing observed behaviors on social media sites like Facebook. The goal of EPM is to foster a similar online community of volunteers to perform these activities on a specialized site devoted to these activities. EPM is ready to be deployed for an impending disaster event.

Project EPIC Analyze offers a collaborative analytics platform for information, social, and language scientists to browse, filter, and annotate data to support the analytic activities that they engage in. EPIC Analyze is currently being developed and tested on the field with scientists who will likely use the system.

Awards

2012 ACM SIGCHI Student Design Competition Finalist
- Fourth place "No Place Like Home" Design Prototype

2012 National Science Foundation (NSF) Graduate Research Fellowship (GRF)

- NSF GRF Honorable Mention based on essays, academic performance, and recommendation letters.

NEUCS (New England Undergraduate Computing Symposium) 2011

- Best Overall Individual Project Presenter for 2011

STEM (Science Technology Education Mathematics)

- STEM Internship Match Scholarship for Internship at Vertica Systems, 2008