Title: Utilizing An Empathy Lens To Understand Information Technology Usage And Adoption

Organizer(s):
Isa Jahnke, Joi L. Moore, and Johannes Strobel
School of Information Science & Learning Technologies
University of Missouri - Columbia

Abstract:
This workshop will enable several research leaders across three disciplines to gain a better understanding of each other's research communities and to foster a new interdisciplinary research agenda for Future of Work at the Human-Technology-Frontier combining Sociotechnical Systems, Human-Computer-Interaction, and Empathy research communities. The three communities will work on two common and problematic areas related to information technology: Distribution of Fake News and Healthcare Technologies. The workshop and project outcomes will provide a new research focus that utilizes the common techniques of each discipline to identify and examine research problems at the Human-Technology-Frontier. The workshop presenters will develop case studies with faculty in the School of Journalism, College of Medicine, and School of Nursing at the University of Missouri, where faculty utilize technology to engage and train students for related professions.

Description:

Purpose and Intended Audience:

Human-Computer-Interaction (HCI), Sociotechnical Systems (STS), and Empathy research exist as distinct research communities within the Human-Technology Frontier. The three research communities apply different strategies within design, development, and research activities:

- HCI researchers focus on developing technical and usable systems to support meaningful and efficient interactions.
- STS researchers focus on processes in the systems and use the broader organizational context to contextualize work practices.
- Empathy researchers focus on perspective taking of humans involved in engineering activities

Objectives of this workshop:

1. Encourage and establish collaborations among three distinct communities of research and practice. This will define the constituency of researchers who share an interest in exploring new forms of interdisciplinary work across the three research communities in addition to two important domains related to health and communication.
2. Identify new research areas related to Engineering Quality of Life at the Human-Technology-Frontier.
3. Identify theoretical and methodological commonalities and contrasts across the represented disciplines related to human-centered design.

The workshop will focus on two exemplary problems: Fake News and Health Care Technologies. The selected case studies will be developed with University of Missouri experts within the fields of Journalism, Medicine, and Nursing. The School of Journalism school at the University of Missouri-Columbia (MU) is internationally top-ranked school that integrates innovative technology with real world training experiences (i.e., Missouri Method), the College of Medicine faculty embrace technologies that provide experiential learning experiences, and the School of Nursing have implemented successful IT monitoring systems in nursing homes.

The two case studies:

- Case 1: Information distribution systems face the issue that fake news quickly spreads and people do not know how to identify false information. a Stanford study by Wineburg et al. (2016) reveals only 30 percent of students have the skill to identify correct from false information. The problem is not only situated in information related to news but the problem also challenges existing trust and credibility of online search behavior.
- Case 2: Healthcare technologies have challenges of being useful to all people who need self-monitoring care due to interface design, how the technologies are accessed, and affordability. For example, older adults may demonstrate difficulties using some of the tools while some low-income patients do not have smartphones or computers to frequently access the tools.

We will invite faculty members who are leaders in their respective discipline and have experience working on large-scale societal problems. We will include a call for participation on university websites,

social media, and peer organization listservs. The following list represents potential participants who will be invited.

Human-Computer-Interaction, HCI research

- John Caroll, Pennsylvania State University
- Dan Cosley, Cornell
- Batya Friedman, University of Washington
- Ben Shneiderman, University of Maryland
- Austin Toombs, Purdue University

Sociotechnical Systems, STS research

- Charlotte Lee, University of Washington
- Gerhard Fischer, University of Colorado, Boulder
- Mark Ackerman, University of Michigan
- Michael Muller, IBM research
- David McDonald, University of Washington
- Kevin Crowston, Syracuse University
- Pascale Carayon, University of Wisconsin-Madison
- Wanda Orlikowski, MIT

Empathy research

- Justin Hess, Indiana University-Purdue University Indianapolis
- Nadja Kellam, Arizona State University
- Joachim Walther, University of Georgia
- Anne Marie Piper, Northwestern University
- Cristi Bell-Huff, Lawrence Technological University

Proposed Format:

- 10 minutes: Review of goals, objectives, and sociotechnical process
- 10 minutes: Introduction of the Case Studies

Participants will be separated into 2 groups for analysis of the case studies. Each group must have a participant that represents one of the three research areas.

- 30 minutes: Identify issues within the case study utilizing theories and concepts from the three research areas.
- 30 minutes: Develop graphical representations of the relationships between the theories and concepts.
- 30 minutes: Develop potential solutions based on theories and strategies form the three disciplines.
- 30 minutes: Identify research questions, methodologies, and research frameworks that include key trends and significant challenges.

15 minutes - Break

After analysis of the 2 case studies within the group, all participants will review case ideas and determine commonalities and differences related to strategies and methodologies :

- 30 minutes: The results will be documented in concept maps and strategic approaches that include contributions from each discipline.
- 30 minutes: Determine themes for white papers, potential funding opportunities to explore research framework, and next steps for dissemination

Goals or Outcomes:

The tri-disciplinary workshop aims to address the complexity and the uncertainty involved in the process of technologically-involved change (Sawyer & Jarrahi, 2013) by creating a new perspective from the three communities. Workshop participants can collaboratively construct understanding of dynamic processes, occurrence of events over time, knowledge about the intention of actors, and the features and constraints of technologies within specific contexts. More specifically, the main goal of the workshop is to explore the intersection of Empathy, HCI, and STS and how they can inform each other to inspire a

new tri-disciplinary research agenda to design and development in an increasing complex and highly dynamic world, addressing Quality of Life at the Human-Technology-Frontier.

Resources from the workshop, including accepted abstracts and presentations, will be made available online in order to guide further discussion in the community. If this workshop participants recommend seeking grant funding, the minutes, notes, and white papers from this workshop will form the basis of that submission.

Relevance to the iConference:

Information technology may not be used for various reasons such as, a) users are not able to adopt the new IT system due to technical problems, b) the technology may not be flexible enough to meet diverse users' needs, and c) the socio-cultural context influenced a different type of usage than was anticipated by the designer. The interdisciplinary strengths of the three communities can become a powerful new approach to inspire, nurture, and address the grand challenges of the "Future of Work at the Human-Technology Frontier".

Duration: Half-day event: 3.5 to 4 hours

Attendance: We anticipate 25-30 researchers and designers from various backgrounds. We plan to bring together a diverse range of participants to exchange unique experiences, interests, and research paradigms.

Special Requirements: None

References

Sawyer, S. & Jarrahi, M. H. (2013). Sociotechnical approaches to the study of information systems. In: Tucker, A. and Topi, H. (Ed) *CRC Handbook of Computing*, Chapman and Hall publisher. Retrieved from http://sawyer.syr.edu/publications/2013/sociotechnical%20chapter.pdf

Wineburg, Sam, McGrew, Sarah, Breakstone, Joel, & Ortega, Teresa (2016). Evaluating Information: The Cornerstone of Civic Online Reasoning. Stanford Digital Repository. Retrieved from http://purl.stanford.edu/fv751yt5934