Advanced Topics in Sociotechnical Systems: Methods and Concepts of Trace Data

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Abstract
This workshop will refine the methods and concepts of sociotechnical systems. Through interactive training we will provide the workshop participants a mix of qualitative interpretation with quantitative, data driven approaches. The workshop will be divided into two parts. First, a conceptual grounding exercise featuring the motivations of participants in sociotechnical research, followed by small group discussions (led by organizers) about the sui generis of "traces" in our work. The second part will be four different technical breakout skills sessions about data collection, preparation, and analysis from both qualitative and quantitative perspectives. This advanced methods workshop builds upon the established base of people and practices to further the impact of sociotechnical research. It is directed towards scholars with exposure to Sociotechnical Systems research and ideas as well as researchers from other domains including science and technology studies, data science, social computing, new media literacies, HCI, critical information studies, and infrastructure studies.
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1 Introduction and Relevance to the 2016 iConference

The iConference is a frequent site of conversation around theories and methods engaging with sociotechnical systems. In the past, this has often been an effort geared towards a conceptual introduction to sociotechnical systems. Now that there is a strong community of researchers focused on sociotechnical systems within the iSchool community, we organize an advanced iConference workshop that builds upon the established base of people and practices to further the impact of sociotechnical research. Our half-day workshop, that follows the introductory sociotechnical morning workshop, is directed towards scholars with exposure to Sociotechnical Systems research and ideas as well as researchers from other domains potentially interested in and important to attend the iConference, such as science and technology studies, data science, social computing, new media literacies, HCI, critical information studies, infrastructure studies. The Consortium for the Science of Sociotechnical Systems (sociotech.net) has a long-term relationship with the iConference, having sponsored a number of specific workshops and panels and institutes for the past several years. As the approach gains traction amongst information scholars, it is incumbent upon leaders and junior investigators who employ the methods to share, publicize and train others who may benefit from applying sociotechnical methodologies and questions in their own area of research. Our workshop is intended to bootstrap events from years past, and to introduce participants to hands-on research interpretation experiences. We believe that this methods workshop will provide participants with a number of outcomes and networking opportunities from the iSchool community, including continuing resources for training and learning about sociotechnical research methods. We also believe that the workshop directly speaks to the 2016 iConference theme of partnering with society, by allowing conference participants to situate sociotechnical research within society and to examine the challenges and impacts of our work 'on the ground' and in real time, together.

2   Proposed Format

The workshop will be divided into two parts. The first portion is a conceptual grounding exercise featuring the motivations of participants in sociotechnical research. The group as a whole will break into 4-5 small groups (led by organizers) and discuss the *sui generis* of "traces" in our work. The second portion of the workshop will comprise of four different technical breakout skills sessions where we will do data collection, preparation, and brief analysis in a variety of different ways. Each technical breakout skills session introduces participants to "methods-in-a-flash" combining tools, data, and questions for engaging with digital traces in innovative ways. Workshop organizers will lead small groups in a series of hands on, interactive labs related to topics such as topic modeling, social media APIs, web scraping, and trace ethnography with metadata. These labs introduce participants to unfamiliar research methods by learning through doing. The breakout sessions are designed so participants working together to increase exposure to diverse methods and data sources. The final portion of the workshop (1 hour) will close the (hermeneutic) loop by focusing on the interpretation, sense making, visualization, and qualitative description of tasks from the technical breakouts. Small groups will report back in this session to circulate questions, ideas, resources, and opportunities.

3   Workshop Goals and Outcomes

This short, interactive workshop further develops and refines the methods and concepts of sociotechnical systems. Through interactive training we will mix qualitative interpretation with quantitative, data driven approaches. The goal is to promote easy and fluid movement between quantitative and qualitative approaches to studying sociotechnical systems through a common language around the design and the application of sound investigative approaches. Finally, we hope to foster a line of sociotechnical research that brings "real traces" from society into our conceptual framework for studying sociotechnical systems to enable broader impact outside the discipline.