

Calling All Computer Scientists and Social Scientists: Establishing a Research Agenda for Computational Social Science

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Abstract

Computer scientists and social scientists are major constituent groups in most iSchools. Our goal is to bring these two groups together, including social scientists who study social phenomena broadly or deeply and computer scientists who have computational approaches that can be used to balance the trade-off between depth and breadth (Cheng, Fleischmann, Wang, & Oard, 2008; Fleischmann et al., 2012; Fleischmann, Oard, Cheng, Wang, & Ishita, 2009; Fleischmann, Templeton, & Boyd-Graber, 2011; Oard, 2009). Some researchers have already begun to define themselves as computational social scientists (e.g., Cioffi-Revilla, 2010; Gilbert, 2009; Lazer et al., 2010). This event will be highly relevant to this group, however, and it will also be useful to computer scientists and social scientists who are just beginning to consider collaboration across this disciplinary divide.

Broadly, computational social science can be seen as the application of computational approaches (including the development of new computational approaches) to systematically study social phenomena. The first wave of computational social science focused on agent-based modeling (e.g., Cioffi-Revilla, 2010; Gilbert, 2009). The second wave of computational social science involved social network analysis (e.g., Lazer et al., 2010; Mascaro, Novak, & Goggins, 2012). The third wave of computational social science is automatic content analysis, which employs natural language processing techniques to scale up content analysis (e.g., Ishita, Oard, Fleischmann, Cheng, & Templeton, 2010; Templeton, Fleischmann, & Boyd-Graber, 2011a, 2011b; Zhou, Fleischmann, & Wallace, 2010). iSchools contain researchers from all three waves of computational social science. iSchools can also play a leading role in developing future waves of computational social science.

One goal of this event is to bring together researchers with complementary interests in computer science and/or social science. Another goal is to help define the emerging field of computational social science and propose some specific research that would help researchers to capitalize on this opportunity. One more goal is to talk about obstacles to successful computational social science research and opportunities to overcome these obstacles, such as new funding mechanisms for interdisciplinary research and collaboration guidelines for collaborating across such broad disciplinary divides. Yet another goal is to set the stage for a larger workshop in the future, perhaps at a future iConference. The final goal is to ensure that the iSchools continue to play a leadership role in the development of computational social science – iSchoolers are already at the cutting edge of this emerging field, and iSchools are uniquely situated to lead this field as interdisciplinary homes to both computer scientists and social scientists.

The event will begin with a brief introductory presentation. We will then hold four rounds of small group lightning discussions, with the requirement that each discussion group must contain at least one computer scientist and at least one social scientist. We will have a list of questions for each round of lightning discussion to cover. We will end with a full-room discussion with the remaining time.

The topic that we will explore, computational social science, should appeal to a wide range of attendees, spanning computer scientists and social scientists. We hope that this event will help people to realize that they are building and to commit to building the field and to make the iSchools central within the field. We also hope that the dynamic format and the continuity of at-conference and online interactions will provide a change of pace from more traditional conference events typically found at other conferences.

Keywords: computational social science, agent-based modeling, social network analysis, automatic content analysis, natural language processing

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