The Center for Information Technology and Society (CITS): Facilitating Interdisciplinary and International collaborations

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The Center for Information Technology and Society (CITS) at the University of California Santa Barbara (UCSB) is a multidisciplinary center with affiliated faculty from 16 departments spanning the Social Sciences, Humanities, Education, and Engineering. The Center’s overarching goal is to discover and apply integrated knowledge from these diverse perspectives to understand and guide the development, use, and effects of information technologies in contemporary society. To achieve our goals, CITS supports and catalyzes research, education, and outreach through interdisciplinary collaborations involving our vibrant network of more than 50 faculty research affiliates. Below we summarize some of the past and present work of the Center through selected examples of our faculty’s contributions to the Center’s research, education, and outreach efforts.

Research

At CITS we seek to inspire and support interdisciplinary research teams composed of nationally and internationally recognized scholars to study how societies and social groups are affected by information technologies and how social dynamics influence technological innovation and diffusion. We create opportunities and provide resources to support our affiliates from the earliest stages of project design, to the development of proposals for external funding, through the completion and publication of their research.

In order to encourage the establishment of interdisciplinary research teams, CITS provides space and financial resources for establishing topical working groups. For example, our “New Media and Trust” working group organized by computer scientists...
and communication scholars resulted in a U. S. National Science Foundation (NSF) funded project, *Towards Automating Privacy Controls for Online Social Networks*, and culminated in several publications (e.g., Nekrasov, Ilkand, Metzger Zhao, & Belding, 2017). As a direct result of our “Internet Infrastructure and ICTD” working group initiative, affiliates from Computer Science and Film and Media Studies also received a large NSF grant titled “VillageNet: Intelligent Wireless Networks for Rural Areas.” In this collaborative project, faculty and graduate students who had deep contextual/cultural knowledge worked side by side with the computer scientists to assure the remote network technology they were developing in Zambia was appropriate for the sociocultural context in which they were operating. The lack of political as well as technical infrastructure and need for cell phone technology were highlighted in field interviews providing the groundwork for the technological developments. The look, feel, and even the name of the software the computer scientists developed were an interdisciplinary enterprise (Pejovic, Johnson, Zheleva, Belding, Parks, & van Stam, 2012). This project has now been expanded to include the Za’atari refugee camp (Jordan) and Native American reservations and involves several CITS graduate student affiliates as well as a visiting scholar.

4 An ongoing project, “Visibility Management and Transparency in the Digital Age,” exemplifies the interdisciplinary and international thrust of the center. CITS faculty affiliates from the Department of Communication and the Technology Management Department have established a long-term collaborative effort with international partners from the Copenhagen Business School and the University of Amsterdam. Their project views transparency as one form of “visibility management” and addresses theoretical and empirical questions related to whether and how digital technologies fundamentally alter organizational and employee decisions and perceptions about what to disclose and to whom. They examine how the flow of information and possibilities for insight and scrutiny are controlled in a digitally ubiquitous environment. The project is grounded in the proposition that visibility is the root affordance of the digital age and that the increasing normative expectations regarding organizational transparency and visibility across corporate, governmental, and nonprofit sectors have both large-scale intended and unintended consequences.

5 Growing out of several workshops in the US and Europe that were co-sponsored by CITS, the Orfalea Center for Global & International Studies at UCSB, and the Copenhagen Business School, the research team co-edited a special section of the *International Journal of Communication* (Flyverbom, Leonardi, Stohl, & Stohl, 2016). The section contextualized the discussion of digital technologies and visibilities in relation to current concerns about surveillance, transparency and secrecy. The research papers articulated the workings of various forms of visibility management, theorized as a fundamental social process as well as an analytical vocabulary to explore the explicit and implicit consequences of attempts to act on the world by digitally controlling and facilitating possibilities for seeing, knowing and governing. These papers rethink notions of transparency and visibility in at least four ways: “They remind us that transparency does not emerge *sui generis*—it is managed; they turn our attention to the variety of metaphors and mechanisms through which we enact transparency; they nudge us to incorporate other senses into our communicative research; and they put transparency in a context of power relations and asymmetrical capacities” (Bratisch, 2016, p.178).

6 A second set of studies is now emerging from this collaborative venture. Working with a CITS visiting scholar from the Amsterdam School of Communication Research they have
developed an Organizational Visibility Scale that decouples visibility from transparency and enables scholars to explore the relationships among information technology, organizational visibility, transparency, trust, and other critical organizational outcomes. The psychometric properties of the scale suggest it is both a valid and reliable instrument in the American setting and it is now being tested in European contexts (Ter Hoeven, Stohl, Stohl, & Leonardi, 2018).

Other recent CITS research initiatives have brought together faculty and graduate students interested in using computational science to support social scientific and humanistic research. CITS supported the expansion of the Social Media Archive and Analytics program, R-Shief (Sakr, 2015), a software program conceptualized and developed by a Film and Media Studies affiliate and computer scientists. This archive consists of over twenty-six billion social media posts in more than seventy languages and has been used by scholars and practitioners from social sciences, humanities, and engineering to conduct computational and textual analysis on social media and digital activism.

A major vehicle for the support of these types of interdisciplinary and international research initiatives is the CITS Visiting Scholars Program which began in 2011. Each year we have at least 3 residential scholars from within and outside the United States for periods ranging from 2 weeks to a full academic year. Visiting scholars receive office space and access to University resources. They meet regularly with graduate students and faculty and participate in CITS sponsored research lectures and symposia. In 2017, we instituted a Research Fellow designation which provides for an official affiliation with the University for a three-year term. CITS appointed two research fellows this year: Dennis Del Favero, Chair Professor of Digital Innovation and Scientia Professor at the University of New South Wales, Sydney, Australia; and Mikkel Flyverbom, Professor of Communication and Digital Transformations at the Department of Management, Society and Communication, Copenhagen Business School, Denmark.

**Educate**

CITS is dedicated to nurturing the skills involved in understanding transitions in technological and social environments of the next generation of researchers, developers, educators, policy-makers, and public citizens. To this end, many of the funded research projects involve graduate and undergraduate students affiliated with the Center. For example, in 2013 graduate students from the Computer Science, Communication, and Film and Media Studies Departments accompanied an interdisciplinary team of CITS affiliated faculty to collect data for their project on “internet freedom and the free flow of informed, censor-resistant online social networks” (Belding. Parks, Metzger & Zao, 2013).

In addition, the Center organizes a Ph.D. emphasis in Information Technology & Society (IT&S) in order to enable graduate students to develop interdisciplinary perspectives and diverse expertise. Each year we offer a “gateway” seminar to introduce students to research paradigms and literatures relevant to studying information technology and society from outside their own discipline. Course topics have ranged from “Algorithms and Culture” to “Smart Cities: Smart Citizens?” Participation in the emphasis also requires students take a set of courses related to information technology outside their own department. Through cultivating a deeper awareness of relevant work in other disciplines, these courses help develop students’ ability to frame their research questions
in novel, creative ways, with broader tools to answer technology and society questions. Our graduates are employed by leading international academic and research institutions.

Outreach

CITS connects with other academic units on campus and at other institutions, with industry, with policy-makers, and with the wider public. We accomplish this through public lectures, sponsored visitors, conferences, media outreach, and multimedia content on our website.

Besides our lecture series, we annually organize a major event designed to engage faculty, students, and the larger community. In 2016, for example, we sponsored a screening of the documentary *Code: Debugging the Gender Gap* followed by a panel discussion with the director, a female engineer from the community, and three UCSB faculty affiliates. More than 200 people from across campus and the local community attended the event and were active participants in the lively discussion regarding the dearth of American female and minority software engineers and the reasons for this gender gap. The film raised the question: “What would society gain from having more women and minorities code?” Other public events have included a series of workshops by the founders of Loomio, an open source software tool for collective decision-making used in more than 90 countries, and a symposium on Life in the Age of Drones. This past year our outreach efforts were thematically linked to our research and education missions.

Fake News in 2017-2018

One of the strengths and weaknesses of a multidisciplinary Center with a large number of participating faculty whose academic homes are in other departments is that faculty do not all converge on a particular sub-topic or research focus. CITS is not poised or intended to be a Center that specializes on one or a few specific topics exclusively and perpetually. Therefore, the most prosperous way to advance as a confederacy of scholars has been to identify broad themes that can match, complement, or entice different researchers’ individual interests into a more collective effort, in cycles. In the 2017-2018 academic year, CITS undertook a year-long multi-faceted research, teaching, and outreach theme on the topic of fake news.

Fake news was an attractive topic for CITS for a variety of reasons. It is now common knowledge that fake news and disinformation through the web and social media is a major problem facing societies around the world. Fake news continues to be an intense focus of the technology industry, government, journalism, politics, as well as in marketing and commerce. In the United States, this topic was particularly salient in 2017 as news continued to break about the presence and potential influence of domestically-and externally-generated fake news in the 2016 presidential election. The activities of Facebook and Cambridge Analytica, as well as the Russian Internet Research Agency, came to light during the same year that CITS focused on these very phenomena. Fake news was an attractive topic for CITS for one more, important reason as well: The scope of the problem and its understanding requires investigation from social science, computer science, humanities, and other fields, working together. In other words, fake news is, by nature, an interdisciplinary phenomenon. The topic was also a good fit in that
some of our affiliated faculty were already doing groundbreaking research on credibility and social media, and involved in other interdisciplinary networks who were working to frame the problem and how academics could respond to its challenges (see Lazer et al., 2018).

Our first major event in these efforts was a symposium in November of 2017, “Is There Any Good News about Fake News?” The full-day event began with a closed-group session of 25 participants, including CITS affiliates from several disciplines, along with visiting academic researchers, as well as industry professionals from the press, fact-checking organizations, and a California-based global social media company. The morning session illuminated how different participants defined the problem, what research and policy questions they were asking, what traditional theoretical and analytic approaches could most usefully be brought to bear on exploring fake news, and what they believed might be the most promising research issues moving forward. The Center was fortunate to have support for this event from a generous advisory board member.

The afternoon portion of the symposium was a panel presentation by four distinguished speakers, which was open to the public and attended by 100 faculty and community members. Speakers included Professor Yochai Benkler, a legal scholar using data science to track the sources of election-related fake news; Maggie Farley, a game developer who showcased an interactive application that improves players’ abilities in evaluating the reputation of news sources; Professor Miriam Metzger, a communication scholar who addressed credibility and trust research as applied to the issue of fake news; and Eugene Kiely, the director of FactCheck.org, who discussed its mission, usage, and role in the future. A video recording of the panel appears on https://ucsb.app.box.com/438f6e7a-f45e-4fda-baa5-26a2e9bc1381.

The next event in our fake news effort was a brainstorming meeting among CITS affiliated faculty, to learn more about individuals’ research questions, methodologies, and the potential for collaboration. The meeting was supported by representatives from the university’s grants and foundations teams, who listened to presentations and live-searched prospective research funding opportunities.

The third set of activities shifted focus to education and outreach. The Center’s doctoral emphasis program conducts a seminar each year, which all Information Technology & Society students must complete at some point during their studies. Consequently, the students who participate in the seminar major in different departments, and come together to share the perspectives of their home disciplines with one another. The doctoral students in the 2018 seminar came from departments of political science, sociology, geography, education, and communication. The core readings for the seminar, likewise, ranged in their interdisciplinary underpinnings. Their foci included the origins of fake news in traditional journalism and in social media, computational underpinnings that facilitate its creation and re-transmission via social media, economic incentives that motivate it, attributes that encourage readership, social network dynamics that reinforce its spread and the gratifications it serves, political and social impacts it potentially renders, psychological biases that resist its dismissal, legal and ethical dilemmas pertaining to its regulation, and potential effects of computational and communication interventions designed to mitigate its influence.

Major objectives of the seminar were to learn about fake news from the variety of perspectives that different disciplines adopt and promote, and then, to translate these approaches into a common language—the language of public understanding. The final
product from the seminar represents a synthesis of materials compiled into a stylistically whole document. In respect to the Center’s outreach mission, and in light of our status as a public educational institution, the students contributed to a collaboratively-authored reader, designed for public consumption and actively distributed to the public by Center affiliates. The final product is an open-access website, entitled *A Citizen’s Guide to Fake News*, at http://cits.ucsb.edu/fake-news/. The contents aimed for about the reading level of an introductory college textbook. Although it is generally accessible, it is also thoroughly annotated with bibliographic references. Sections of the website include What is fake news; A brief history of fake news; Where does fake news come from; The danger of fake news in inflaming or suppressing social conflict; The danger of fake news to our election; How is fake news spread by bots, trolls, microtargeting, and people; Why we fall for fake news; Protecting ourselves from fake news through fact-checkers and their limitations; Games that teach about fake news; and, What can I do today? The website was published in August of 2018, and of this writing (December, 2018), the site has had over 12,000 visitors, who spend, on average, 3 minutes on each page. By many measures, the effort seems to be successful. Similar efforts in the future will aim for publication earlier in the summer, so that secondary and post-secondary education teachers have more opportunity to consider incorporating all or part of such work into their syllabi and lesson plans for the upcoming school year. The fake news efforts continue with original research projects that are underway.

The next focus or theme for CITS’s research, education, and outreach efforts focuses on online hate. The growing prevalence of online harassment, racism, and aggression in many forms correlates strongly with the incidence of hate crimes in the physical world, and once again, researchers, policy-makers, technology companies, journalists, and families express growing concern about the increasing toxicity of life online. CITS has begun research meetings, curriculum design, and the identification of visiting researchers who can address this broad concern. Our research and seminar will focus on some subset of topics among the following: racist/ethnic/sexist social media postings, hate speech, hate/ideological websites and discussion fora, trolling (individual, organized, state-sanctioned, automated), doxing, “dog whistles,” harassment, uncivil discourse, cyberbullying, etc.; the crossovers of online to offline aggression; the identification, prevalence, and impact of these phenomena; how these activities are socially organized; and remediation efforts such as intervention messages (human and robotic), prejudice reduction, and cohesion-building via social media. We hope once again to gain knowledge, creatively mitigate problems, and help educate industry, government, and the public about this additional, critical concern facing technology and society.

CITS continues to seek new and innovative ways to develop a paradigm of social science, humanistic, and engineering research that accelerates scholarly development to better understand and help shape the complex development, use, and social effects of emerging information technologies. The increasing breadth and depth of our research collaborations enrich our connections to scholars, centers, and institutions throughout the world and hopefully help us to better understand our world.
BIBLIOGRAPHIE


Information Visibility: Development of the Attributes of Visibility Scale"


NOTES

1. Detailed information regarding CITS affiliates, research initiatives, lecture series, educational programs and outreach efforts can be found online at www.cits.ucsb.edu.

AUTEURS

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Revue française des sciences de l’information et de la communication, 15 | 2018