

seminar

"Usable and Secure Systems for Everyone"

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abstract

System usability research is critical to developing secure systems in the hyper connected world in which we live. People who use products and technologies demand that they are usable. At the same time, these systems must also be secure to protect both stored and shared information. To understand this interplay between system usability and security, my research has focused on voting systems—a technology ubiquitous and familiar to virtually all adults in our democratic society. Voting systems must be so easy to use that every single voter can vote, despite voters' diverse backgrounds and their infrequent use of voting systems. Concurrently, voting systems must also be tamper-resistant for votes to be recorded and tallied accurately, while not compromising the privacy of individual votes. To bring together and address these wide-ranging concerns, I joined an interdisciplinary team of cryptographers, auditors, human factors / HCI researchers, and voting officials to research and develop a new, end-to-end voting system called STAR-Vote. This system will be used by Travis County (i.e., Austin, Texas, and surrounding areas) in upcoming elections because—for the first time—every single voter can easily vote on a transparent system that is both resistant to hacking and verifiable by voters. This project also contributes to more general psychological research that pertains to system usability, user mental models, system design and development methods, and psychological measurement across a wider array of topics in usable security.

biosketch

Dr. Claudia Ziegler Acemyan is a Postdoctoral Research Fellow in the Department of Psychology at Rice University. As a human factors and human-computer interaction researcher, her work focuses on usable security. More specifically, she studies how to make highly secure systems very easy to use, assesses mental models to improve users' interactions with secure systems, and develops psychometrically validated instruments to measure users' trust. Dr. Acemyan completed her Ph.D. in Psychology at Rice University in 2014, M.A. in Architecture at UCLA in 2011, M. Arch. at Rice University in 2007, and B.A. in Psychology at the University of Michigan in 2002. Her research has been funded by the National Science Foundation and the National Institute of Standards and Technology.

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