Populations and Scales

Cooperative Privacy and Security: Learning from People with Visual Impairments and Their Allies
Jordan Hayes, Smirity Kaushik, Charlotte Emily Price, and Yang Wang, Syracuse University

Privacy and Security Threat Models and Mitigation Strategies of Older Adults
Alisa Frik, International Computer Science Institute (ICSI) and University of California, Berkeley; Leysan Nurgalieva, University of Trento; Julia Bernd, International Computer Science Institute (ICSI); Joyce Lee, University of California, Berkeley; Florian Schaub, University of Michigan; Serge Egelman, International Computer Science Institute (ICSI) and University of California, Berkeley

Evaluating Users' Perceptions about a System's Privacy: Differentiating Social and Institutional Aspects
Oshrat Ayalon and Eran Toch, Tel Aviv University

A Self-Report Measure of End-User Security Attitudes (SA-6)
Cori Faklaris, Laura Dabbish, and Jason I. Hong, Carnegie Mellon University

Security Behaviors and Experiences

The Effect of Entertainment Media on Mental Models of Computer Security
Kelsey R. Fulton, Rebecca Gelles, Alexandra McKay, Richard Roberts, Yasmin Abdi, and Michelle L. Mazurek, University of Maryland

A Typology of Perceived Triggers for End-User Security and Privacy Behaviors
Sauvik Das, Georgia Institute of Technology; Laura A. Dabbish and Jason I. Hong, Carnegie Mellon University

Karoline Busse and Julia Schäfer, University of Bonn; Matthew Smith, University of Bonn/Fraunhofer FKIE

“Something isn't secure, but I'm not sure how that translates into a problem”: Promoting autonomy by designing for understanding in Signal
Justin Wu, Cyrus Gattrell, Devon Howard, and Jake Tyler, Brigham Young University; Elham Vaziripour, Utah Valley University; Kent Seams and Daniel Zappala, Brigham Young University

“I was told to buy a software or lose my computer. I ignored it”: A study of ransomware
Camelia Simoiu, Stanford University; Christopher Gates, Symantec; Joseph Bonneau, New York University; Sharad Goel, Stanford University

New Paradigms

Enhancing Privacy through an Interactive On-demand Incremental Information Disclosure Interface: Applying Privacy-by-Design to Record Linkage
Hye-Chung Kum, Population Informatics Lab, Texas A&M University; Eric D. Ragan, INDIE Lab, University of Florida; Gurudev Ilangoivan, Mahin Ramezani, Qinbo Li, and Cason Schmit, Population Informatics Lab, Texas A&M University

From Usability to Secure Computing and Back Again
Lucy Qin, Andrei Lapets, Frederick Jansen, Peter Flockhart, Kinan Dak Albah, and Ira Globus-Harris, Boston University; Shannon Roberts, University of Massachusetts Amherst; Mayank Varia, Boston University

Certified Phishing: Taking a Look at Public Key Certificates of Phishing Websites
Vincent Drury and Ulrike Meyer, Department of Computer Science, RWTH Aachen University
Developers and Sysadmins

“We Can’t Live Without Them!” App Developers’ Adoption of Ad Networks and Their Considerations of Consumer Risks .................................................. 225
Abraham H. Mhaidli, Yixin Zou, and Florian Schaub, University of Michigan School of Information

Usability Smells: An Analysis of Developers’ Struggle With Crypto Libraries ........................................ 245
Nikhil Patnaik, Joseph Hallett, and Awais Rashid, University of Bristol

System Administrators Prefer Command Line Interfaces, Don’t They? An Exploratory Study of Firewall Interfaces .................................................................................. 259
Artem Voronkov, Leonardo A. Martucci, and Stefan Lindskog, Karlstad University

Keepers of the Machines: Examining How System Administrators Manage Software Updates .................. 273
Frank Li, University of California, Berkeley; Lisa Rogers, University of Maryland; Arunesh Mathur, Princeton University; Nathan Malkin, University of California, Berkeley; Marshini Chetty, Princeton University

Authentication

Communicating Device Confidence Level and Upcoming Re-Authentications in Continuous Authentication Systems on Mobile Devices ......................................................... 289
Lukas Mecke, University of Applied Sciences Munich, Munich, Germany and LMU Munich, Munich, Germany; Sarah Delgado Rodriguez and Daniel Buschek, LMU Munich, Munich, Germany; Sarah Prange, University of Applied Sciences Munich, Munich, Germany and Bundeswehr University Munich, Munich, Germany and LMU Munich, Munich, Germany; Florian Alt, Bundeswehr University Munich, Munich, Germany

Exploring Intentional Behaviour Modifications for Password Typing on Mobile Touchscreen Devices ........... 303
Lukas Mecke, University of Applied Sciences Munich, Munich, Germany and LMU Munich, Munich, Germany; Daniel Buschek and Mathias Kiermeier, LMU Munich, Munich, Germany; Sarah Prange, University of Applied Sciences Munich, Munich, Germany and Bundeswehr University Munich, Munich, Germany and LMU Munich, Munich, Germany; Florian Alt, Bundeswehr University Munich, Munich, Germany

Why people (don’t) use password managers effectively ........................................................................ 319
Sarah Pearman, Shikun Aerin Zhang, Lujo Bauer, Nicolas Christin, and Lorrie Faith Cranor, Carnegie Mellon University

Of Two Minds about Two-Factor: Understanding Everyday FIDO U2F Usability through Device Comparison and Experience Sampling ......................................................... 339
Stéphane Ciolino, OneSpan Innovation Centre & University College London; Simon Parkin, University College London; Paul Dunphy, OneSpan Innovation Centre

A Usability Study of Five Two-Factor Authentication Methods .................................................................. 357
Ken Reese, Trevor Smith, Jonathan Dutson, Jonathan Armknecht, Jacob Cameron, and Kent Seamons, Brigham Young University

Personal Privacy

Personal Information Leakage by Abusing the GDPR “Right of Access” .................................................... 371
Mariano Di Martino and Pieter Robyns, Hasselt University/UL, Expertise Centre For Digital Media; Winnie Weyts, Hasselt University - Law Faculty; Peter Quax, Hasselt University/UL, Expertise Centre For Digital Media, Flanders Make; Wim Lamotte, Hasselt University/UL, Expertise Centre For Digital Media; Ken Andries, Hasselt University - Law Faculty, Attorney at the Brussels Bar

An Empirical Analysis of Data Deletion and Opt-Out Choices on 150 Websites ........................................ 387
Hana Habib, Carnegie Mellon University; Yixin Zou, University of Michigan; Aditi Jannu, Neha Sridhar, Chelsea Swoopes, Alessandro Acquisti, Lorrie Faith Cranor, and Norman Sadeh, Carnegie Mellon University; Florian Schaub, University of Michigan

Anthony Vance, Temple University; David Eargle, University of Colorado Boulder; Jeffrey L. Jenkins, C. Brock Kirwan, and Bonnie Brinton Anderson, Brigham Young University

(continued on next page)
Wearables and Smart Homes

“There is nothing that I need to keep secret”: Sharing Practices and Concerns of Wearable Fitness Data
Abdulmajeed Alqhatani and Heather Richter Lipford, University of North Carolina at Charlotte

“I don't own the data”: End User Perceptions of Smart Home Device Data Practices and Risks
Madiha Tabassum, University of North Carolina at Charlotte; Tomasz Kosinski, Chalmers University of Technology; Heather Lipford, University of North Carolina at Charlotte

More than Smart Speakers: Security and Privacy Perceptions of Smart Home Personal Assistants
Noura Abdi, King’s College London; Kopo M. Ramokapane, University of Bristol; Jose M. Such, King’s College London