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# Designing Effective Privacy Notice and Consent Mechanisms

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**Abstract**

Privacy notice and choice are essential aspects – and often requirements – of privacy and data protection regulation worldwide. Yet, today's privacy notices and controls are often ineffective at informing users about data practices or allowing them to express choice. This CHI course looks at the hurdles surrounding the design of privacy notices and controls, and presents a process and principles for designing privacy notices and controls that are more effective at helping users manage their privacy in technical systems. The course provides an overview of the design space for privacy notices and controls, including best practice examples, case studies and design exercises with a particular focus on privacy notices and controls in the context of emerging technologies, such as mobile devices and the Internet of Things. The course further includes a discussion of pitfalls and best practices for evaluating privacy interfaces in user studies.

At the end of this course, participants will be able to analyze the challenges for privacy notice and controls in the context of complex technical systems, and will be able to design suitable privacy interface and interaction solutions based on an understanding of the respective design space and best practices.

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**Author Keywords**

Privacy; usable privacy; interaction design.

**ACM Classification Keywords**

H.5.m [Information interfaces and presentation (e.g., HCI)]:  
Miscellaneous

**Motivation**

Privacy notices and controls have become a common accompanying feature of many systems, services and products. The purpose of a privacy notice is to make users aware of how their personal information is collected, used, retained, and shared by a service or product in order to enable users to make informed decisions when they're asked to provide consent to the collection of their data. Privacy notices can take different shapes and leverage different channels, ranging from a privacy policy document posted on a website, or linked to from mobile app stores or mobile apps, to signs posted in public places to inform about CCTV cameras in operation. Even an LED indicating that a camera or microphone is active and recording constitutes a privacy notice, albeit one with limited information about the data practices associated with the recording. Providing notice about data practices is an essential aspect of data protection frameworks and regulation around the world – laws and regulations such as the General Data Protection Regulation (GDPR) in Europe, or HIPAA, COPPA, GBLA and CalOPPA in the United States, define legal requirements for providing notice to users and obtaining consent from them before collecting or processing personal information.

While transparency has been emphasized as an important practice for decades, today's privacy notices are often ineffective at informing users. They can be lengthy or overly complex, discouraging users from reading them. Smartphones, wearable devices, and smart home technologies

introduce additional challenges as they are equipped with a multitude of sensors but no or small screens and limited interaction capabilities restrict how users can be given information about data practices and control over their privacy.

This course addresses the challenge of designing privacy notices, controls and consent mechanisms that are usable, useful, and yet unobtrusive by presenting a systematic design process and providing an extensive overview of the design space for privacy notices and controls [9]. This course is rooted in the instructors' extensive research on the effectiveness of privacy notices and control mechanisms [1, 2, 4, 3, 5, 6, 7, 8, 9, 10].

**Benefits & Learning Objectives**

The design of effective and user-friendly privacy notices and controls is an important, yet often overlooked, aspect of user experience and interaction design, given the increasing number of legal and regulatory requirements for privacy notices and controls. This course looks at the hurdles surrounding the design of privacy notices and controls and presents a design process and principles for designing privacy notices and controls that are more effective at helping users manage their privacy in technical systems. The course provides an overview of the design space for privacy notices and controls, including best practice examples, case studies and design exercises. The course further includes a discussion of promises and pitfalls when evaluating privacy interfaces in user studies.

At the end of this course, participants will be able to analyze the challenges for privacy notice and controls in the context of specific complex systems, and will be able to design suitable privacy interface and interaction solutions based on a deep understanding of the respective design space and best practices.

**Intended Audience**

This course is intended for practitioners, researchers, and students who work with systems that process private or sensitive information. They seek to integrate privacy notices and controls into their system's user experience in a usable and useful manner.

Researchers and students who are new to but interested in the field of usable privacy and security will also benefit from this course and the overview of existing research provided.

**Prerequisites**

There are no formal prerequisites for this course besides an interest in privacy or user experience design. Class participants will be expected to interactively participate in a design exercise and discussion.

**Course Content**

The course consists of lecture components and an interactive design exercise. The following is an overview of the course's content:

1. Issues and challenges with privacy notices and controls (5 min.)
2. Process and principles for designing privacy notices and controls (10 min.)
3. Design space for privacy notices and controls (20 min.)
4. Use case: mobile privacy (5 min.)
5. Design exercise (20 min.)
6. Design ideas discussion (10 min.)
7. Evaluating privacy interfaces (10 min.)

**Practical Work**

Participants will engage in a design exercise in small groups. Participants will be presented with a novel system that involves sensors and processing of personal information. They will develop design ideas and concepts for this system based on the presented design process, design principles and design space. Participant groups will present their ideas to the larger group to stipulate discussion on potential design avenues.

**Instructor Background**

**Florian Schaub** is an Assistant Professor in the School of Information at the University of Michigan. Dr. Schaub's research and teaching focuses on empowering users to effectively manage their privacy in complex socio-technological systems. His research interests span privacy, human-computer interaction, mobile and ubiquitous computing, and the Internet of Things. Before joining the University of Michigan, Dr. Schaub was a postdoctoral fellow at Carnegie Mellon University. He has been part of the organizing committee for the Symposium on Usable Privacy and Security (SOUPS) since 2015, and serves as Associate Chair on the CHI'17 Privacy, Security and Visualization subcommittee.

**Rebecca Balebako** is an Information Scientist at RAND Corporation. Dr. Balebako's research focuses on digital privacy and how we make decisions to share information. Her research relies on an understanding of computer science, human-computer interaction, and public policy. At RAND, she examines how government institutions should understand and implement privacy regulation and privacy engineering. As an adjunct instructor at Carnegie Mellon University, she teaches classes on privacy engineering and privacy policy.

## Resources

The authors' paper "A Design Space for Effective Privacy Notices" [9] provides an overview of the course's topic and contains extensive references to further readings.

## Acknowledgments

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