The Usable Privacy Policy Project
Towards Effective Web Privacy Notice & Choice

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https://usableprivacy.org   https://explore.usableprivacy.org

Motivation

Notice & choice
- Websites' **privacy policies** are the de facto standard for notice & choice online
- Privacy policies provide **notice about data practices**, e.g., data collection, use, sharing, retention, user access

Complex privacy policies
- Privacy policies are often **long** and **complex**
- **Few users read them**
- Efforts to improve notice & choice **lack industry support** (e.g., P3P, DNT)

Project Overview

Semi-automated extraction of data practices from privacy policies
- Combining crowdsourcing, NLP & ML
- Fine-grained annotation scheme
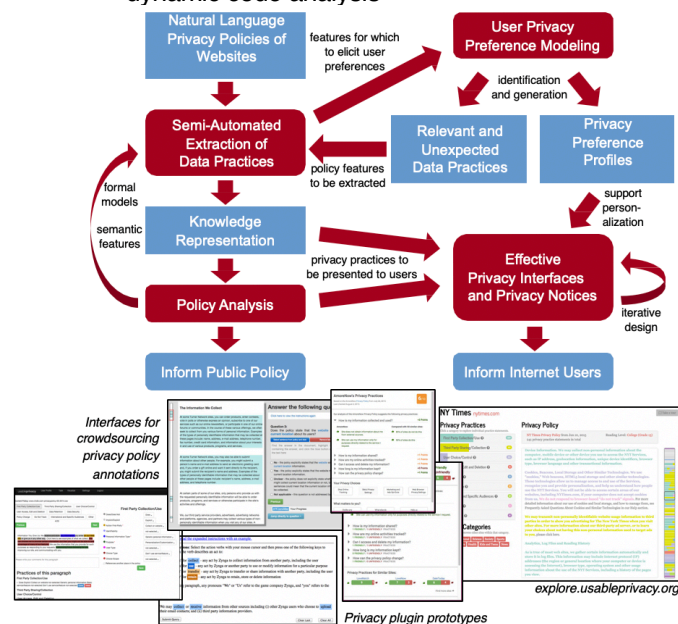
Privacy policy analysis
- Inconsistencies in policies
- Ambiguity and vagueness in policy
- Demographics of disclosure statements

Privacy preference modeling
- Focus on relevant and unexpected practices
- Understand cognitive biases
- Create privacy preference profiles to support personalization

Effective privacy user interfaces
- Analyze usability issues
- Provide relevant information
- Actionable information & choices
- Support privacy decision making (e.g. mobile app privacy assistant, opt-out browser extension)

Approach

Extract data practices from privacy policies
- Crowdsourcing
- Natural language processing/machine learning
- Privacy policy analysis at scale
- Develop & pilot tools (e.g. browser extension)

Modeling People's Privacy Preferences
- Understanding people's privacy concerns and expectations
- Using ML to predict people's privacy preferences
- Devel op & pilot tools (e.g. mobile app privacy assistant)

Automated Privacy Compliance Analysis :
Combine privacy policy analysis with static & dynamic code analysis

Interfaces for crowdsourcing privacy policy annotations

Privacy plugin prototypes

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- In-depth models of people's privacy preferences
- Demonstrated used of machine learning to predict people's mobile app privacy preferences
- Mobile App Privacy Assistant deployed in Google Play store
- Automatic extraction of opt-out choices from the text of privacy policies (plug-in to be released soon)
- Informed public policy discussions (participation at many scientific as well as public policy and industry conferences and events)
- Broad set of education & dissemination activities
- Over 70 publications

Accomplishments

- Demonstrated practicality of automatically extracting disclosure statements from the text of privacy policies
- Created research community in this area
- In-depth analysis of privacy policy text, including readability, ambiguity, vagueness, etc
- Release of website with automatic annotations of 7,000 policies
- Piloted tool for automatic mobile app compliance analysis with regulators (work with Cal AG and FTC)
- Automatically analyzed over 1 million Android apps for potential privacy compliance issues

The 4th NSF Secure and Trustworthy Cyberspace Principal Investigator Meeting (2019 SaTC PI Meeting)
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