

Privacy Management in Ubiquitous Environments

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<http://hodamehrpouyan.com/privacy.html>

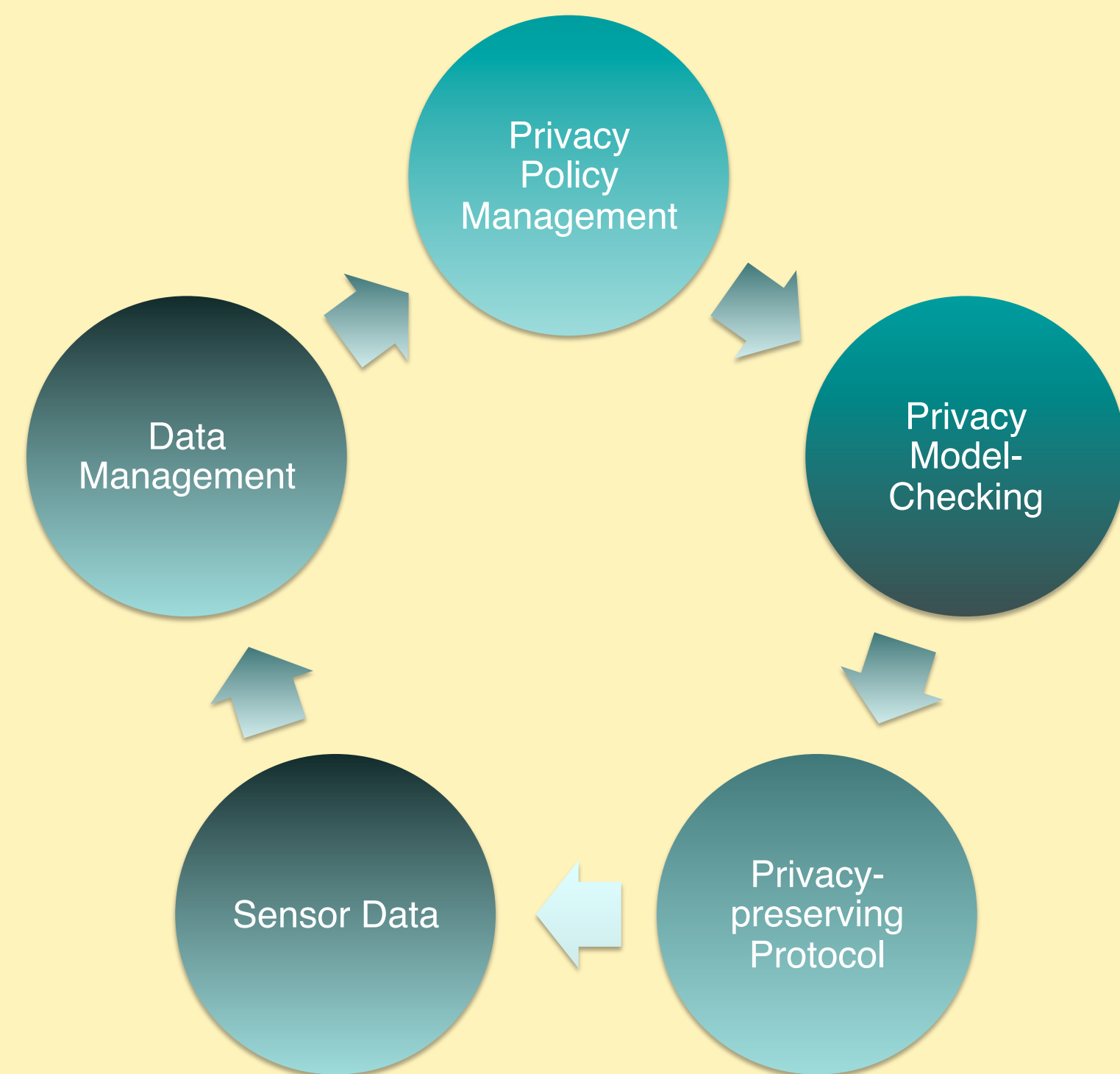


Project Description:

Most of the current methods for enforcing security policies consider coarse-grained privacy policies, e.g. either to grant an application access to private information or deny it. The goal of this proposal is to develop a new set of verification tools, algorithms, and interfaces that enable secure, effective and unobtrusive management of users private information.

The proposed approach is composed of modules that implement the following key functionalities:

- interpreting users privacy intents and translating them into actionable rules;
- checking the consistency of rules with user's intents;
- invoking appropriate privacy-preserving protocols to comply with users intents.



Approach

Privacy Rules and their consistency

- Personality traits and semantic analysis on generated and specified intents to identify privacy restrictions and the subjects they govern.
- Model-checking technique to ensure high-level intents are consistent with rules.

Privacy-preserving Protocols and Negotiation

- Implement privacy-preserving protocols
- Protocol compiler
- Select appropriate adversary model as part of protocol negotiation.

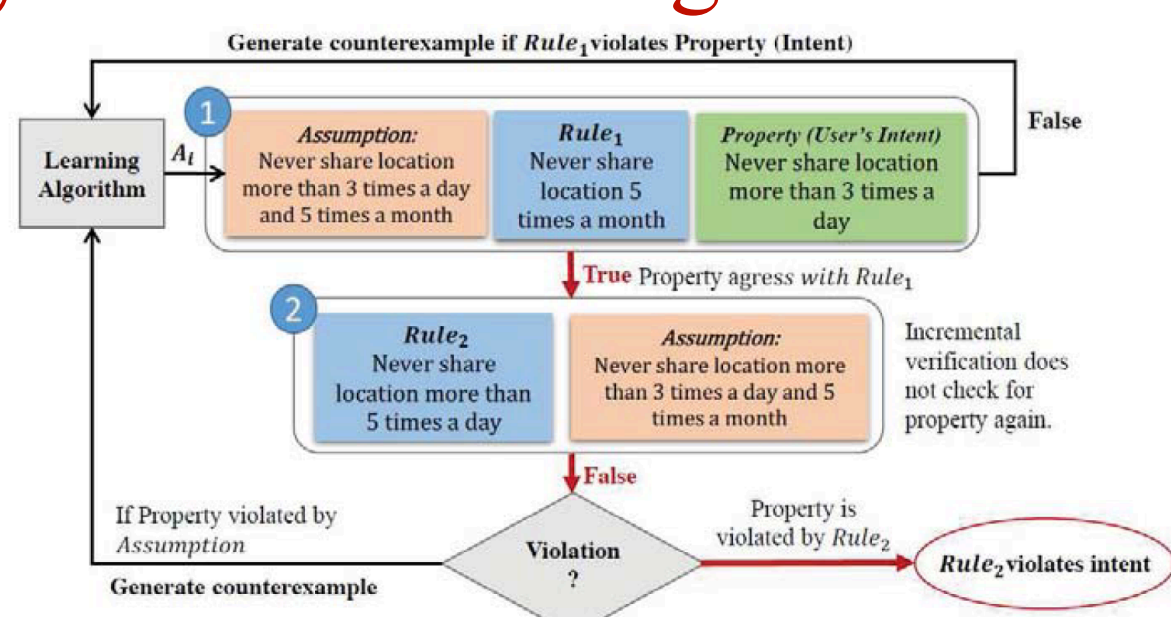
Measuring Personality for Automatic Elicitation of Privacy Preferences

Individuals are uniquely different in how they make decision on what information to disclose. the Big-Five personality traits of *openness*, *conscientiousness*, *extroversion*, *agreeableness*, and *neuroticism* is used to predict user's privacy preferences.

Data Management

- Disclosure Identification,
- Semantics Interpretation,
- Linkage Description

Privacy Model-checking



Privacy-preserving Protocols and Protocol Negotiation

- Decoy-based techniques,
- Sanitization techniques,
- Protocol compiler

Interested in meeting the PIs? Attach post-it note below!



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NSF Secure and Trustworthy Cyberspace Inaugural Principal Investigator Meeting
Nov. 27 -29th 2012
National Harbor, MD

