Privacy concerns of implicit secondary factors for web authentication

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WAY Workshop 2014
Passwords +...

Behavioral/soft biometrics
Passwords +...

191.255.255.255

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Mozilla/5.0 (iPad; U; CPU OS 3_2_1 like Mac OS X; en-us) AppleWebKit/531.21.10 (KHTML, like Gecko) Mobile/7B405

var x = window.screen.availWidth;
var y = window.screen.availHeight;

User agent information
Passwords +...  

Usage patterns
Three privacy(ish) effects

I. Data permanence
II. Inherent sensitivity
III. Legitimate secondary uses
Data permanence
Legitimate uses
Research challenges
Signal extraction

➔ How fast can a game learn your typing/swiping/clicking style?

➔ Do we need more permissions?
Privacy-preserving authentication

➔ Privacy-preserving machine learning exists already

➔ Can we adapt it for authentication?

➔ Data minimization?
Returns to centralization

➔ Data already collected
➔ Data collected *frequently*
➔ Third party logins are a signal, too
➔ Are small services doomed?
Thank you!

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