# Intuitive security policy configuration in mobile devices using context profiling

Mari Nikkarinen

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# Papers Surveyed

Gupta, A., Miettinen, M., Asokan, N. and Nagy, M., 2012, September. Intuitive security policy configuration in mobile devices using context profiling. In *Privacy, Security, Risk and Trust (PASSAT), 2012 International Conference on and 2012 International Conference on Social Computing (SocialCom)* (pp. 471-480). IEEE.

Gupta, A., Miettinen, M. and Asokan, N., 2011, March. Using context-profiling to aid access control decisions in mobile devices. In *Pervasive Computing and Communications Workshops (PERCOM Workshops),* 2011 IEEE International Conference on (pp. 310-312). IEEE.

# Problem

- About 40 % of people don't use screen lock in their phones.
- Anyone who gains access to the phone gains access to all data on it.
- So how can we make these phones more secure?

# Proposed Solution

### Context profiling

Using WLAN and Bluetooth devices detected by the mobile phone to assess if the current Context of Interest (CoI) is familiar.

### Safety level

It is assumed that CoIs users spend a lot of time in are "safe".

Users are also able to give instant feedback on the safety level of a CoI, the effect of which then wears off.

# Proposed Solution

## Mechanics of the solution

Three modules

- ▶ data collection: senses WLAN and Bluetooth devices
- ▶ CoI detection: calculates CoI based on sensed devices
- ▶ context analysis: keeps track of and calculates familiarity and safety scores

# Issues with Proposed Solution

- About 45 % of people who use a screen locking mechanism find it annoying.
- Insider attacks: people who have access to the user's safe locations.
- Attackers with no WLAN or Bluetooth capable devices.
- Correlation between safety and familiarity.
- Security concerns with Bluetooth.

# Proposed Improvements and Expansions

- Adding other sensors for CoI
  - GPS
  - facial recognicion
- Adding other methods for log-in
  - motion sensors
  - thumb prints

# Other Sources

Micallef, N., Just, M., Baillie, L., Halvey, M. and Kayacik, H.G., 2015, August. Why aren't users using protection? investigating the usability of smartphone locking. In *Proceedings of the 17th International Conference on Human-Computer Interaction with Mobile Devices and Services* (pp. 284-294). ACM.

Muslukhov, I., Boshmaf, Y., Kuo, C., Lester, J. and Beznosov, K., 2013, August. Know your enemy: the risk of unauthorized access in smartphones by insiders. In *Proceedings of the 15th international conference on Human-computer interaction with mobile devices and services* (pp. 271-280). ACM.

Dunning, J., 2010. Taming the blue beast: A survey of bluetooth based threats. *IEEE Security & Privacy,* 8(2), pp.20-27.