

Secure Systems Group

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About me

Professor, University of Helsinki, Sep '12 – Jul '14

Professor, Aalto University, from Aug 2013

Previously

Nokia (14 y; built up Nokia security research team)

IBM Research (3 y)

<http://asokan.org/asokan> for more background

Secure Systems Group

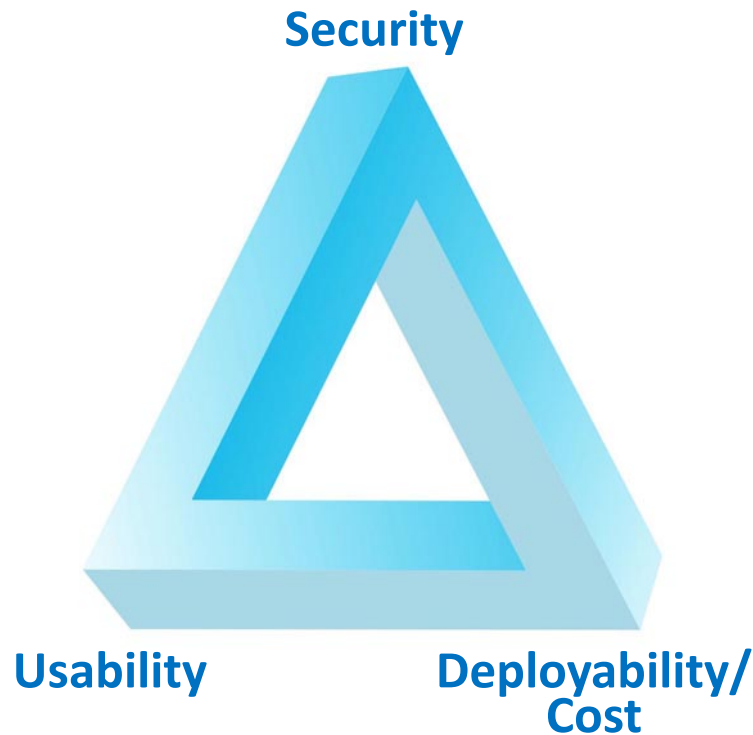
Ramping up...

- 2 postdocs and 4 grad students
- 2 industrial PhD students starting

<http://www.cs.helsinki.fi/group/secure/>

Research Mission

How to make it possible to build systems that are simultaneously **easy-to-use** and **inexpensive** to deploy while still guaranteeing **sufficient protection**?



Current themes

- Mobile (platform) security
- Contextual security
- Cloud computing security

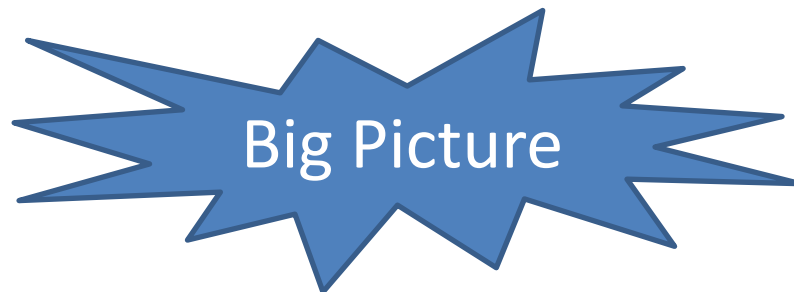
Mobile platform security

- How can app developers use existing hw/sw platform security features to address new use cases?
 - e.g., Use Linux containers + namespaces to realize app migration between devices
- Can we find lightweight indicators to predict susceptibility for infection of a mobile device?
 - e.g., set of installed apps (“company of friends”)
 - help in search for previously unknown malware

Contextual Security

Usability and Security can be simultaneously improved by exploiting contextual cues

- Environmental context (sensors)
- Social context (relationships)
- On-device context (usage patterns)



Cloud Computing Security

- A new opening
- How to improve security of cloud-hosted services while satisfying
 - business needs (e.g., deduplication vs encryption of user data)
 - usability needs (e.g., key management for accessing strongly encrypted cloud data from multiple devices)
 - privacy needs (e.g., protecting user access patterns while steering users away from unsafe services)