Teamproject 2015:
Attacking Smartphones: Misusing Sensor Data for Password Stealing

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What is it all about?

Everyone uses secret passwords on their smartphones.

Examples for passwords with high (financial) value:
- Apple AppStore
- Google Play
- Amazon App-Shop
- Browser (Bank-Account, Password restricted areas)

What is our goal?

We want to steal the secret password – but without letting the user know.
How do we achieve our goal?

“Reading” a secret password from the smartphone when being entered – can we use a keylogger?

- Hardware-Keylogger (Physical access?)
- Software-Keylogger (Installation? Security?)

What about side-channels?

- Electro-magnetic (Inside the smartphone?)
- Acoustic (Fingers on glass?)
Problem: Traditional Keyloggers

Are traditional keyloggers applicable?
Try it yourself!

http://tinyurl.com/gyrodemo
Solution: Motion Data

Solution

We utilize the build-in **gyroscope, accelerometer and compass**!

- All three are build-in in most of modern smartphones.
- Measures angular velocity, acceleration and magnetic forces resp.

## Executing the Attack

### “Reading” Inputs

Use the motion data to detect and map the touch input to corresponding keys.

### No Data Protection!

Every application and even every website can access motion data without requiring the user’s consent!
Join us!

We are looking for you!

What you need besides motivation:
- Programming skills in general
- Good programming skills in either HTML/JS/CSS or JAVA or C# or Objective-C/Swift
- Basic mathematical knowledge

What you will do:
- Use mathematics, programming and cryptography mixed with most modern technology
- Programm apps / websites
- Gather and evaluate data sets
- Use machine learning algorithms