

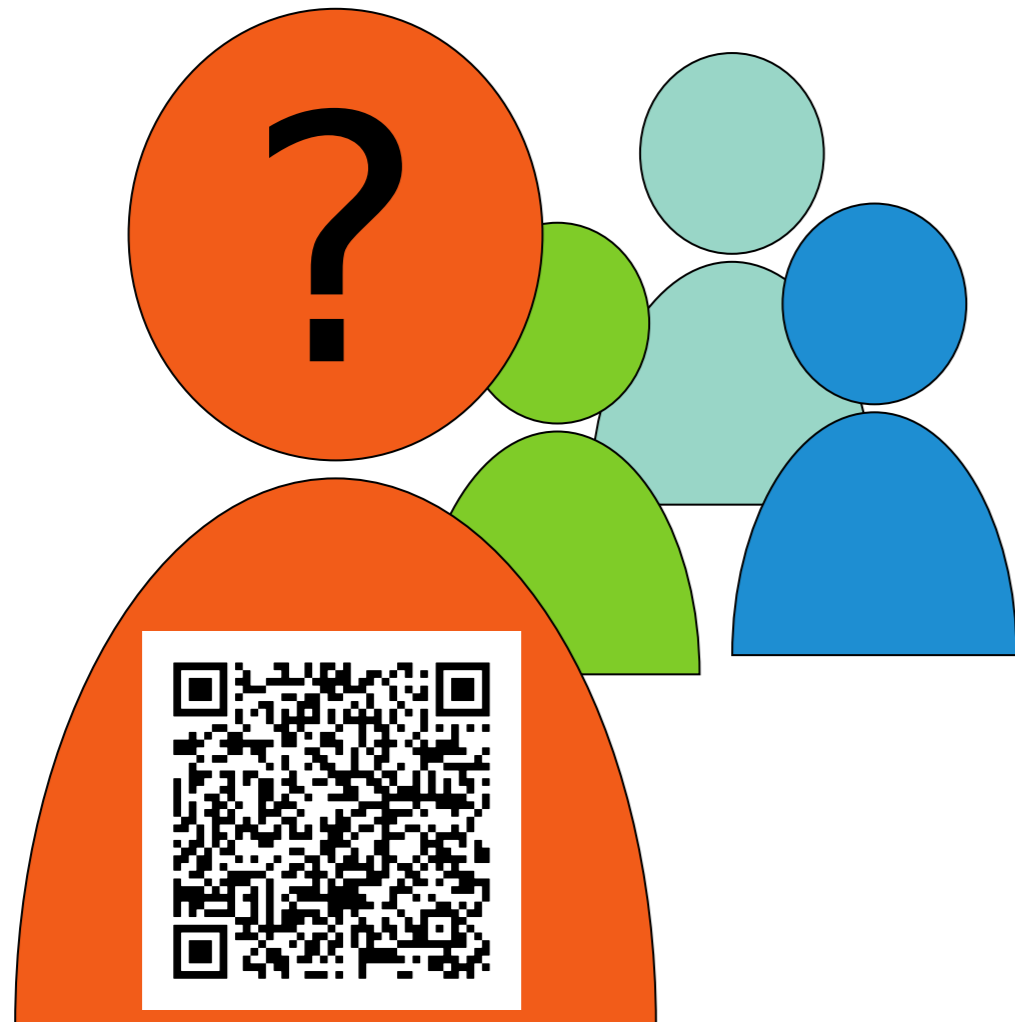
# What do my gadgets know about me?

Sensor data can reveal human actions, like the **typed** content on a keyboard or the **written** text. Similarly, it can also reveal **sensitive details** about individuals, for example for tracking them.

Matthias Gazzari

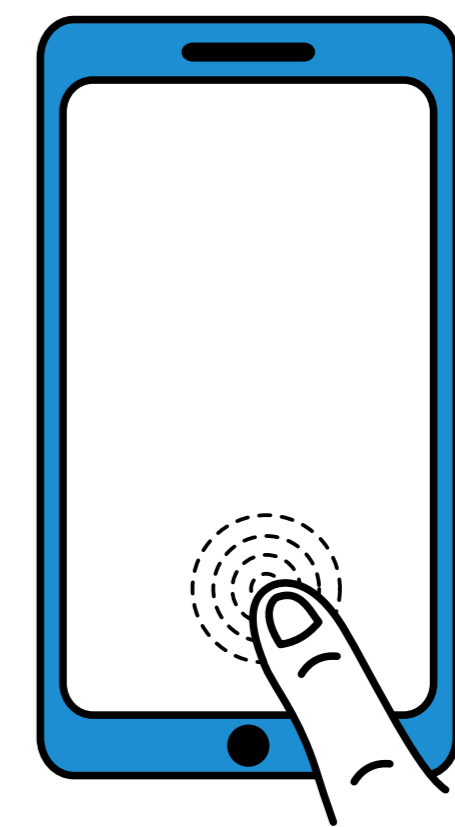
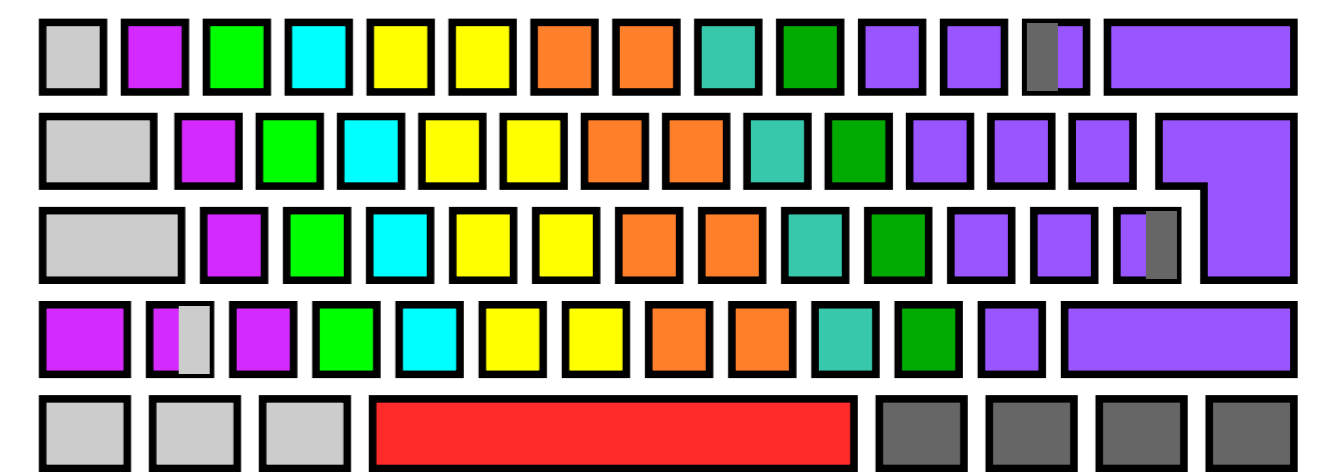
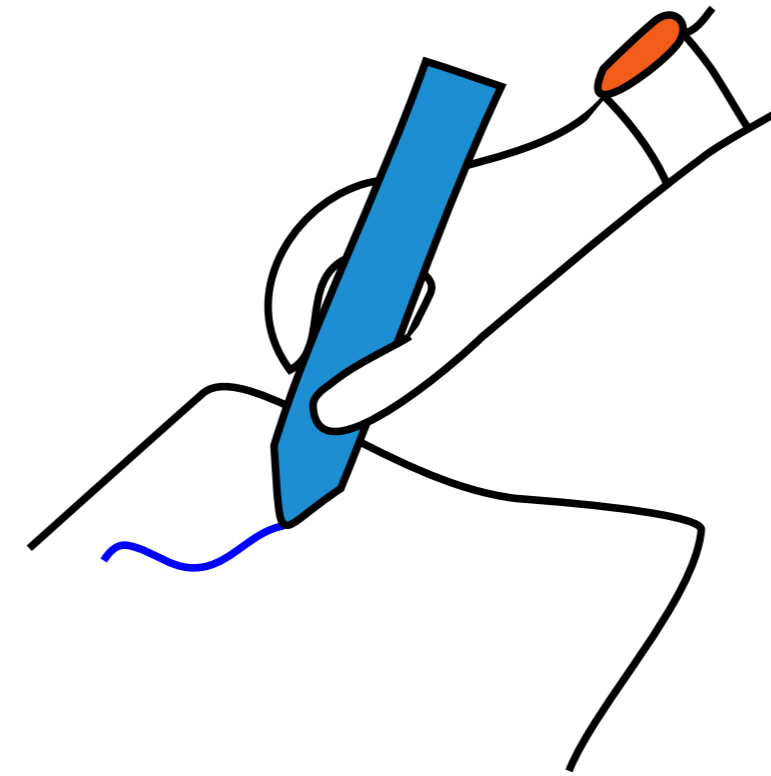
PI-Tandem: Prof. Dr.-Ing. Matthias Hollick & Prof. Dr. Gerrit Hornung, LL.M.

## User Identification



- What **sensitive attributes** can be inferred from sensor data?
- Can we **impersonate** users with synthetic sensor samples based on another sensor modality?
- Can we (sensibly) **obfuscate** the sensor data to hide sensitive attributes?

## Input Reconstruction



## Sensor Data

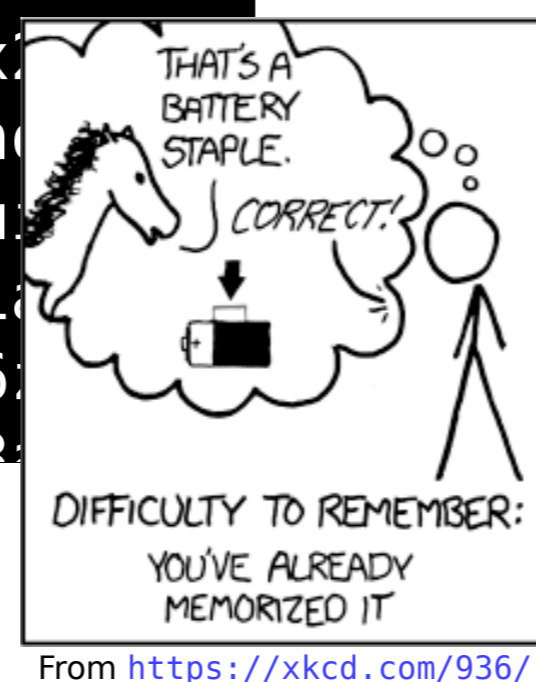
CSI                      Keystroke Timings  
 IMU  
 EMG                      Video                      ECG  
 Audio                      PPG

- What is the influence of the **setting** on such side-channel attacks?
- Which **modality** (or combination) is the most effective?

## Paper: My(o) Armband Leaks Passwords

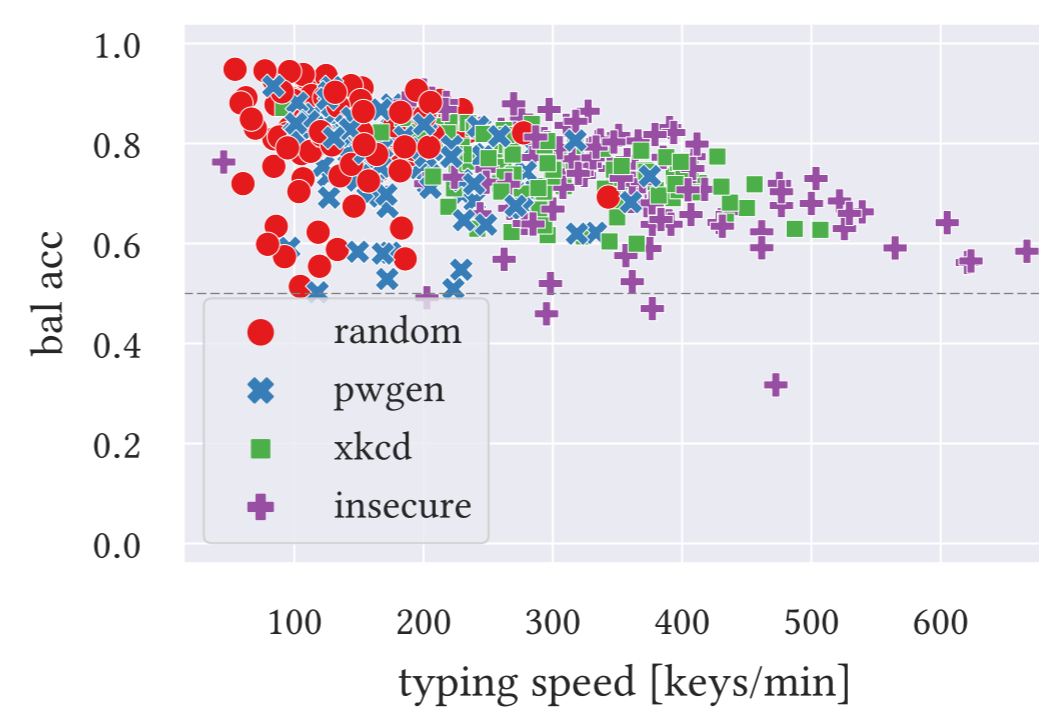


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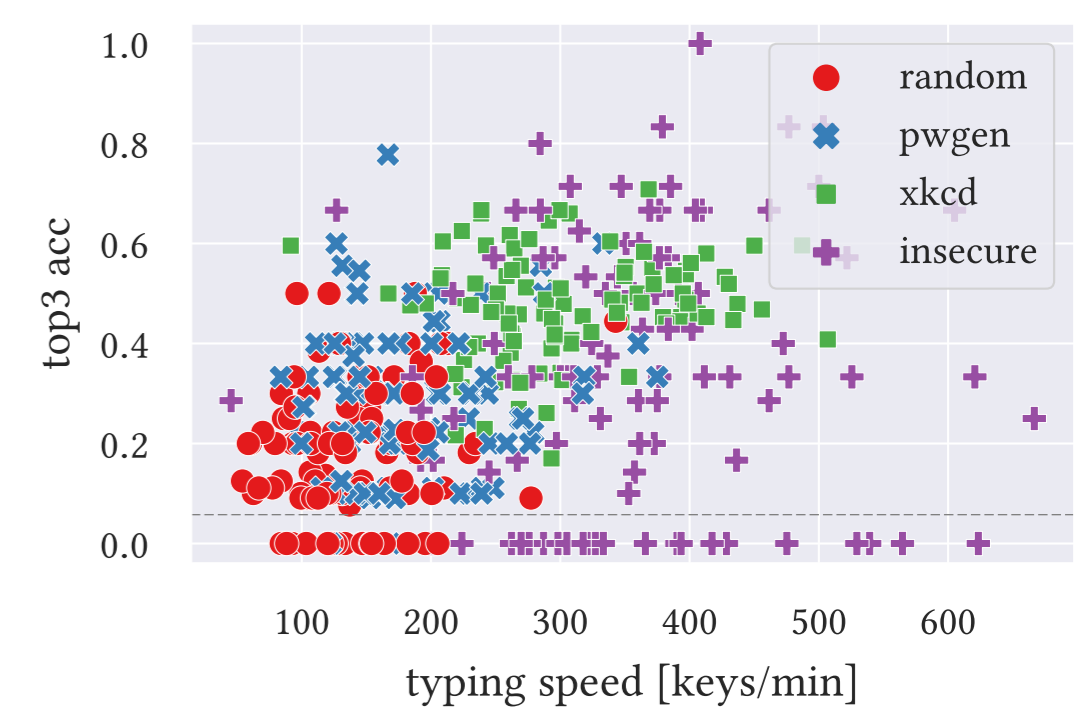


From <https://xkcd.com/936/>

### Keystroke Detection



### Keystroke Identification



Matthias Gazzari, Annemarie Mattmann, Max Maass, and Matthias Hollick. 2021. "My(o) Armband Leaks Passwords: An EMG and IMU Based Keylogging Side-Channel Attack." Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies, Volume 5, Issue 4. <https://doi.org/10.1145/3494986>

