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HOCHSCHULE DARMSTADT
UNIVERSITY OF APPLIED SCIENCES
fbi
FACULTY OF COMPUTER SCIENCE

CRISP
Center for Research
in Security and Privacy

– Master-/Bachelor Thesis –

Presentation Attack Detection on mobile touchless Fingerprint Acquistion Setups

da/sec

da/sec is the biometrics and internet security research group and is affiliated with University of Applied Sciences Darmstadt and the Center for Research in Security and Privacy (CRISP). The group is led by Prof. Dr. Harald Baier and Prof. Dr. Christoph Busch. The focus of the group is on highly innovative and applied IT security research in the special fields of biometrics, internet security and digital forensics. Read more on www.dasec.h-da.de.

Motivation & Goal

Compared to touch-based schemes, touchless fingerprint recognition achieves a higher usability and user acceptance. However, especially mobile acquisition devices are vulnerable to presentation attacks. A possible approach of a presentation attack detection (PAD) on video-based mobile touchless acquisition devices is to analyze the finger movement. More complex mechanisms exploit reflection properties of human skin, the presence of sweat pores or the fingers vain structure.
The goal of this project is to implement a prototype which is able to detect presentation attacks based on a finger video and evaluate different detection schemes.

Tasks

- Establish a database with genuine and imposter videos
- Implement PAD schemes for touchless fingerprints
- Evaluate the performance of different PAD schemes

We offer

- Incentives for the student to work on this project (work within scientific context, international collaboration)
- Acquisition hardware

Requirements

- High motivation and creativity
- Image and video processing experiences
- Good analytical skills

By Date

By now / by appointment

Contact

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