h_da
HOCHSCHULE DARMSTADT
UNIVERSITY OF APPLIED SCIENCES
fbi
FACHBEREICH INFORMATIK

ATHENE
Nationales Forschungszentrum
für angewandte Cybersicherheit

Master/ Bachelor Thesis
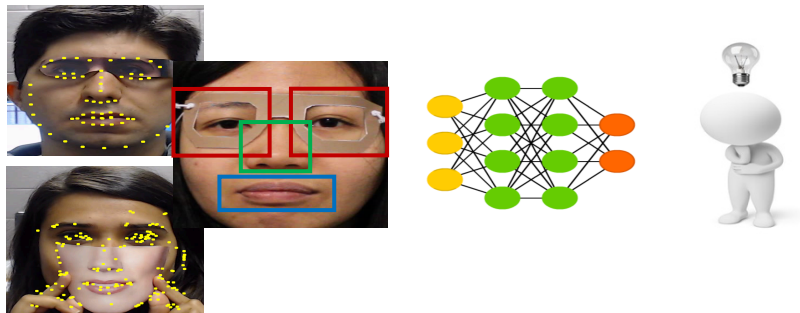## Looking on local facial regions to improve Presentation Attack Detection

da/sec

da/sec is the biometrics and internet security research group and is affiliated with University of Applied Sciences Darmstadt and the National Research Center for Applied Cybersecurity (ATHENE). 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 http://www.dasec.h-da.de/.

Motivation & Goals

The large development experienced by social networks has unveiled security concerns related to potential attacks on biometric systems. In particular, several examples have shown how a non-authorized subject can easily download a photo or video of a given person and use it to gain access to numerous applications. In order to address those security threats, most Presentation Attack Detection (PAD) approaches have analysed the whole face images for PAD, which lead, in many cases, to a detection performance degradation. Since many artefacts created in the fabrication of Presentation Attack Instruments take place on a local face part and no over the whole face, it would be the utmost importance to determine which would be the most suitable human face regions for facial PAD.

Tasks

- Design and implementation of Machine learning and Deep learning approaches for facial PAD.
- Benchmark of earlier techniques on different facial regions such as eyes, noise, and mouth, and landmark regions.

Requirements

- High motivation
- Interest in security technologies and biometrics
- Strong interest in research
- Good programming skills (Python) are of advantage.

Start / Period

Immediately / by appointment

Contact

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