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HOCHSCHULE DARMSTADT
UNIVERSITY OF APPLIED SCIENCES
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FACULTY OF COMPUTER SCIENCE

ATHENE
National Research Center
for Applied Cybersecurity

– MSCA-ITN PhD Position –

Detection of manipulated biometric images using machine learning methods and image forensics

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 www.dasec.h-da.de and www.athene-center.de

Motivation & Goal

Recent research has demonstrated the vulnerability of face recognition systems to attacks based on manipulated biometric images. If manipulated biometric images, e.g. morphed images or deep-fakes, are infiltrated to a biometric recognition system accurate and reliable recognition can not be guaranteed. The aim of this project is to develop reliable methods to detect manipulated face images which remains an unsolved research challenge. Deep learning methods will be employed to train appropriate classifiers and the potential of forensic image analysis will be investigated to reliably detected anomalies in facial images.

Tasks

- Detailed study on the vulnerability of commercial face recognition systems to attacks based on manipulated images
- Novel techniques to detect manipulated face images
- Increased understanding of the inter-relation between biometric variance, entropy and the threat of attacks based on manipulated face images.

We offer

- Incentives for the student to work on this project (work within scientific context, international collaboration, work on project in collaboration with companies)

Requirements

- Master degree in computer science, electrical engineering or related fields, language skills: English or German
- High motivation and creativity, programming skills, good analytical skills
- Interest in biometric recognition

How to apply

Send your application/ CV to **Prof. Dr. C. Busch** and **Dr. C. Rathgeb**
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