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HOCHSCHULE DARMSTADT
UNIVERSITY OF APPLIED SCIENCES
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FACHBEREICH INFORMATIK

ATHENE
Nationales Forschungszentrum
für angewandte Cybersicherheit

Master/ Bachelor Thesis
## Automatic Score and Classification of Face Beauty Images

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. Christoph Busch. The focus of the group is on highly innovative and applied IT security research in the special fields of biometrics. Read more on www.dasec.h-da.de.

Motivation & Goals

The task of determining the beauty of one person is a subjective metric. "Beauty is in the eye of the beholder." Today, many smartphone applications or software allow modifying the face images to remove artifacts, modifying the lips, nose, and hair color. This task is trivial for social networks, but it is very relevant in the Face Identification system. The attacker will try modifying or hiding one person's identity. Even they can produce a change in the image to look like another person. Today we can use this kind of tool to remove artefact and get a soft-skin of Morphing images and get a valid passport or a successful identification process. Therefore, it is relevant to index, detect and classify this modification with a low error rate.
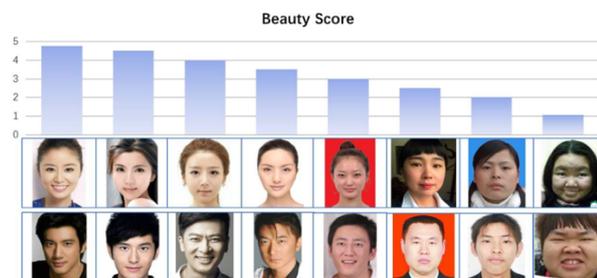
*Imagen taken from SCUT-FBP5500-Database-Release

Tasks

- Design and develop a Deep Learning model to assess the beauty score (index) in an image pair-based morphing attack detection system.
- Design and implement an automatic votation system classifiers (beauty/no beauty) approach.
- Evaluation and benchmark of manually labelled tagged images and automatic beautification scores.

Requirements

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

Start / Period Immediately / by appointment

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