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HOCHSCHULE DARMSTADT
UNIVERSITY OF APPLIED SCIENCES
fbi
FACULTY OF COMPUTER SCIENCE

ATHENE
National Research Center
for Applied Cybersecurity

– Master-/Bachelor Thesis –
Face Image Database Duplicate 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. 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

Face image databases are used for facial biometrics research, for example in the context of face recognition. To create large and varied databases, many of the more recent databases scraped images from the web. This however can mean that identical or near-identical images are collected. Some of the databases even contain exact image duplicates, which can be filtered out rather easily via hash functions. Automatically filtering images with only almost equivalent content, but e.g. with different resolutions, is more complicated. Here duplicate false positives need to be avoided. Additionally, different databases are used by researchers in scenarios for which the set of images should not overlap - e.g. face recognition model training and testing. The same filtering approach used to detect near-identical images within one database could also help to detect overlap between different databases.

Tasks

- Detect near-identical image duplicates in real databases, for example with perceptual hashing and/or face recognition models.
- Examine the trade-off between true and false positives.
- Optional: Analyse the performance of a face recognition model on a database with and without the duplicates.

Start / Period

By now / by appointment

Contact

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Subject 3
Image 4

Subject 7
Image 1

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