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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 –
JPEG XL Compression Detection for Face Images

da/sec

da/sec is the biometrics and 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

JPEG XL is a new image compression codec. In the context of biometrics it can be useful for various types of data, such as face images. While it has been shown that JPEG XL can provide better lossy compression than e.g. the original JPEG, quality degradation is still possible with higher compression ratios. The aim of this topic is to assess how strongly a JPEG XL image has been compressed by inspecting the decoded pixel data. More specifically, the quality of a single image should be assessed with respect to the lossy compression's potential influence on face recognition.

Tasks

- Develop one or more models that assess the quality of a single image in terms of the effect of JPEG XL compression that may have been applied to the image.
- A model could aim to assess the apparent JPEG XL compression in general with respect to a lossless version of the image, or it could more specifically assess the compression effect on face recognition performance.
- The performance of the model(s) should be evaluated.

Start / Period

By now / by appointment

Contact

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Image → Quality assessment → 0.10 Quality score

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