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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

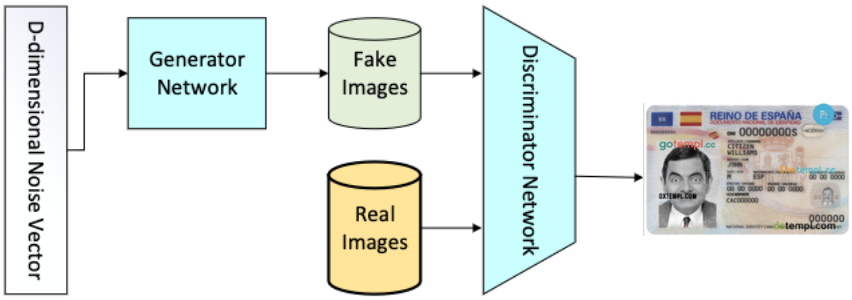
Generation of Synthetic ID Cards/Passport Images using GANs

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

Different methods have been used to detect fraud in personal ID documents have been presented in recent years. Those systems rely on deep learning methods, such as Convolutional Neural Networks (CNN), in order to achieve great detection accuracy. Deep learning systems, in general, require a large number of examples to train successfully; however, the sensitive nature of ID cards and passports makes it very difficult to acquire the number of images needed. For that reason, in this work, we will be required to create synthetic examples of ID card/passport images to enhance the dataset on which fraud-detection networks are trained.



Tasks

- Analyse the State of the art of GAN applied to ID-card/Passport generation images
- Train a GAN model to generated high-quality images (Low FID score).
- Evaluate a Presentation Attack Detection System

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

Contact

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