– Master-/Bachelor Thesis –

Efficient Vision Language Models for Digital and Physical Attack Detection

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 and Prof. Dr. Christian Rathgeb. 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 & Goal

Visual Language Models (VLMs) are a category of foundation models that consist of millions of parameters and are trained with huge amounts of data that make them capable of successfully representing and understanding images and other types of content.

The aim of this project is to explore strategies such as Knowledge Distillation, Pruning and Quantization, among others, that make VLMs efficient in detecting digital (e.g., morphing) and physical (e.g., attack presentations) attacks.

Tasks

- Explore strategies to reduce the number of parameters of VLMs while maintaining high performance for attack detection.

We offer

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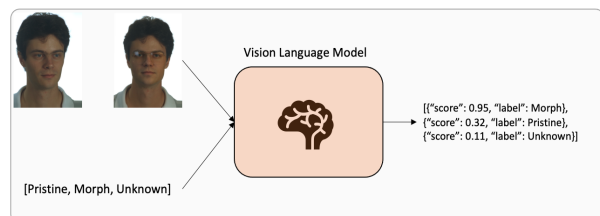
Requirements

- High motivation and creativity
- Programming skills
- Good analytical skills
- Interest in biometric recognition

By Date

By now / by appointment

Contact

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