
– MSCA-ITN PhD Position –

Privacy preserving indexing of large-scale biometric databases

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. Harald Baier and 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 and www.athene-center.de

Motivation & Goal

Large-scale biometric deployments are quickly becoming ubiquitous even though a centralised mass storage of biometric data causes legal issues and privacy concerns. The computational workload of the conventional retrieval method, which requires an exhaustive search in the identification mode, quickly becomes impractical for large systems. This issue necessitates the research into algorithms for efficient biometric identification, i.e. biometric indexing. The feasibility of employing biometric indexing techniques in conjunction with privacy-preserving template protection schemes has yet to be explored. The focus of this project is fuse both technologies for face, fingerprint, iris, and multi-biometrics in order to achieve computationally efficient and privacy-preserving authentication in large-scale biometric databases.

Tasks

- Benchmark on the applicability of template protection methods in biometric identification systems
- Proposal of new template protection techniques which allow for rapid comparison
- New indexing techniques designed to index and retrieve protected biometric templates.

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

- Master degree in computer science, electrical engineering or related fields, language skills: English or German
- High motivation and creativity, programming skills, good analytical skills
- Interest in biometric recognition

How to apply

Send your application/ CV to **Prof. Dr. C. Busch** and **Dr. C. Rathgeb**
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