



Introduction to Scientific Working (ISW)

Advisor: **Secure Applications area**

Motivation

ISEC's "Secure Applications Area" consists of multiple teams, working in the areas of web security, identity and trust management, access control, mobile security, computation on encrypted data, and other fields of applied security and privacy.






A strong focus is **identity management** in the context of eGovernment, e.g., identity wallets and federated identity systems (i.e., ID Austria and eIDAS). Our interest is in how to build these systems in a way that maximizes user **privacy**.

Additionally, we look into techniques to increase user's trust in cryptographic systems (e.g., **key transparency**).

Another focus is **mobile security**. We are interested in innovations that assist application developers in creating secure services, even if they are not security experts themselves.

We also research **privacy-preserving computation** techniques like multi-party computation (MPC) and federated learning (FedL).

Topics for ISW 2025/26

-  Literature research on current status of identity wallets in Europe and world-wide.
smore@tugraz.at
-  How do Device Bound Session Credentials ("cookies with cryptography") work?
smore@tugraz.at
-  How do C2PA Content Credentials work to ensure pictures are not AI generated?
smore@tugraz.at
-  How do mobile phone networks detect/combat caller ID spoofing?
smore@tugraz.at
-  How do PDF viewers verify if certificates used for PDF signatures are trustworthy and not revoked?
jakob.heher@tugraz.at

Literature

- > [Jakob Heher](#)
- > [Edona Fasllija](#)
- > [Florian Draschbacher](#)
- > [Stefan More](#)
- > [Karl Koch](#)
- > research@a-sit.at

Courses & Deliverables

- Introduction to Scientific Working**
Short report on background
Short presentation
- Bachelor Project**
Project code and documentation
- Bachelor's Thesis**
Project code
Thesis
Final presentation

Recommended if you're studying

- CS
- ICE
- SEM

Prerequisites

- > Interest in **application security, mobile security, privacy, identity management, ...**

Advisor Contact

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