Lehrstuhl für Sicherheit
in der Informationstechnik

Fraunhofer
AISEC

Announcement: Research Assistant (HiWi)

Hardware Security

Hardware security comprises attacks on and protection measures in integrated circuits, microchips, as well as modules of several microchips on circuit boards. The main challenge is defending against attackers with physical access to their targets and the provision of a basic hardware security layer on which further protective mechanisms, e.g., for operating systems and applications, can be built.

Challenges

Our motivated team in the Hardware Security department works to *evaluate*, *design*, and *maintain* security of critical systems. This includes:

- Hardware security evaluations of products, chips, and systems in the laboratory
- Development of state-of-the-art evaluation tools, including machine learning
- Side-channel analyses and fault attacks on cryptographic implementations
- Development of cryptographic implementations, in hardware (e.g., FPGA) and software (e.g., on uC)
- Tamper detection using physical unclonable functions (PUF)
- Hardware development for RISC-V and open-source hardware platforms
- Security and risk analyses of systems - after a vulnerability has become known or beforehand
- Security concepts for embedded systems and IoT products

Interested?

We are constantly looking for new student team members that are excited about hardware security. Your work will have a valuable impact on industry and the scientific community. Your creativity, ideas, and skills will pave the way for solutions beyond the state of the art. Send your application via e-mail with your personal motivation, your CV, and most recent certificates and grades to the contacts below. We are excited to meet you!

Contact

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