Chair of Security in Information Technology
TUM Department of Electrical and Computer Engineering
Technical University of Munich

TLM

Forschungspraxis, Interdisciplinary Project, Bachelor's Thesis

# Implementation of a PUF-Module using Dynamic Function eXchange

Physical Unclonable Functions (PUFs) exploit manufacturing process and physical environmental variations to generate unique signatures. These signatures can be used for key generation or in challenge-response protocols.

In this work, a PUF-Module for key derivation should be implemented on XILINX FPGA. The new module will use the capabilities of Dynamic Function eXchange (previously known as partial reconfiguration) in order to improve efficiency and security of the design.

During the course of the thesis, the following should be covered:

- Get familiar with key derivation from PUFs
- Plan and conduct the implementation on a Basys3 Board
- Test the implementation

This work can be conducted in German or English. Please contact the thesis supervisor for further details. In case of a high qulaity of the work, results might be published. Further details on the topic will be provided in a preliminary discussion of the work.

## Prerequisites

- Excellent VHDL skills
- Pre-knowledge in at least one of the following fields: Security, Physical Unclonable Functions, Error Correcting Codes

## Contact

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