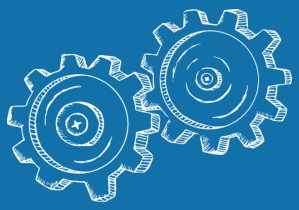


Side-channel evaluation of NIST PQC selected schemes CRYSTALS-Kyber and CRYSTALS-Dilithium

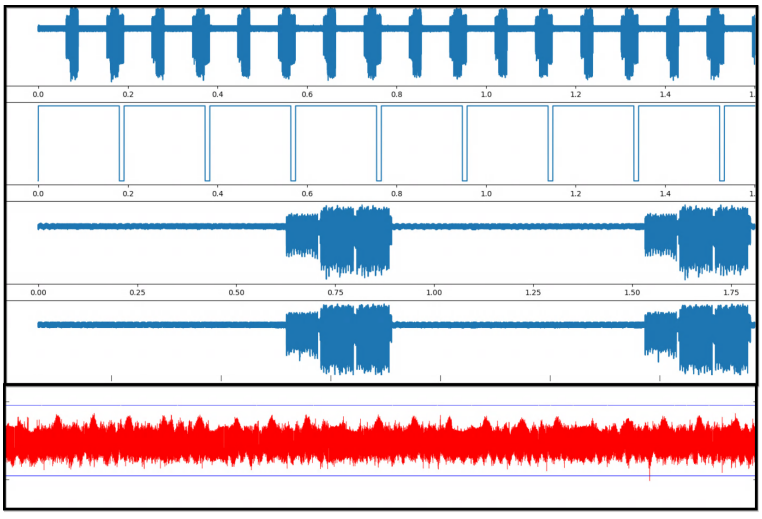
Advisor: **Aikata**

Motivation

NIST has selected CRYSTALS-Kyber and CRSYATLS-Dilithium for standardization. Now the users need efficient and secure implementations to deploy them. Our group has designed a unified cryptoprocessor, `KaLi`, for both schemes. Together we will embark on a journey of protecting it against side-channel analysis. This will involve the application of the traditional masking scheme as well as exploring alternate cheaper countermeasures.

Goals and Tasks

- Understand the schemes and their implementations.
- Come up with efficient masking method.
- Explore alternate cheap countermeasures.



Literature

- A. Aikata et al.
  KaLi: A Crystal for Post-Quantum Security
  https://eprint.iacr.org/2022/1086
  2022

Courses & Deliverables

☑ **Master Project**
- Project code
- Report
- Presentation

– OR –

☑ **Master's Thesis**
+ DiplomandInnenseminar (CS)
- Initial presentation
- Project code
- Thesis (60+ pages)
- Final presentation

Recommended if you're studying

☑ CS ☑ ICE ☑ SEM

Prerequisites

- Interest in implementation security
- Programming (C/C++, Verilog)

Advisor Contact

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