Lasse Letager Hansen

Curriculum Vitae

Contact Information

lasse@letager.dk

Coding Skills

Languages (100+ hours)

- C++,
- C#,
- Python,
- Rust,
- Haskell,
- OCaml,
- SML,
- Prolog
- etc.

Teaching

- DISSY
- Optimization
- FSV

Conference Talks

- CPP-2024
- CoqPL-2024
- TYPES-2024
- ZKProof'7
- NordiCrypt-2025

Language Skills

- Danish (Native)
- English (Fluent)
- Chinese (A-level)
- German (Entry)

SUMMARY

PhD candidate in Computer Science specializing in high assurance cryptography and formal verification. Experienced software developer with strong skills in modern programming languages including C++, Rust, and Python. Passionate about building high-assurance systems with a track record of practical implementations and contributions to open-source projects. Seeking industry roles in software development, verification, research, and other technical challenging topics.

EXPERIENCE

PhD. Student at Aarhus University

I have been part of making frameworks to develop high assurance cryptographic protocols and primitives. These were used to implement and prove security and correctness of

- Advanced Encryption Standard (AES),
- Transport Layer Security (TLS), and
- Open Vote Network (OVN) – an e-voting smart contract.

Research Assistant at Aarhus University

I helped formalize smart contracts by building a specification language (Hacspec) for Cryptographic protocols, which can be translated to Rocq, `F*` and EasyCrypt.

Junior software developer at Danske Commodities

I helped design and program a framework for Python scrapers, and had a lot of responsibility in developing and fixing important systems.

EDUCATION

- PhD in Computer Science, Aarhus University (Defence: Nov. 17th)
- MSc in Computer Science, Aarhus University
  - **Cryptography Courses:**
    - Cryptology,
    - Cryptologic Protocol Theory, and
    - Cryptographic Computation
  - **Programming Languages Courses:**
    - Functional Programming,
    - Language-Based Security, and
    - Program Analysis and Verification
- BSc in Computer Science, Aarhus University
  - Elected courses: Linear Algebra, Algebra, Machine Learning

CONTRIBUTION TO (OPEN-SOURCE) PROJECTS

Summer 2025

Implementing a tabled type class resolver for Rocq in Embedded λ-Prolog Interpreter (ELPI).

All of 2021-25

I have developed the Rocq backend of Hax, a Rust tool for translating code into proof assistants.

Spring 2020

My masters thesis on M-types and coinduction in cubical type theory merged into the Cubical Agda GitHub repository.

Spring 2019

I have been part of translating a simple probabilistic imperative language "pwhile" to a probabilistic ML-like language "$\mathcal{R}$ML".

Spring 2018

I have implemented a capability machines interpreter and used capabilities to develop an inline reference monitors.

PERSONAL PROJECTS AND INTERESTS

- Game (Engine) development from scratch (C++, Rust, Python)
- Simulating strategies for Racebile (a board game)
- Competitive programming (completed Advent of Code [2023,2024], Kattis [top 700])
- Building a compiler stack targeting Piet (esotaric programming language)
- Learning to code using stenography
- Volunteered in the computer science Friday bar (2023-2025)