



Robert Krook

Functional Programmer

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SKILLS

Software: Primarily Haskell & C, but also Erlang, Python, SML, Java, SQL, etc.

Tools: Git, Linux, GDB, Make. Currently learning Nix.

PROJECTS

Scoria (published)

Haskell EDSL for writing Real-Time applications for IoT-devices.

HasTEE (published)

Haskell Framework for Confidential Computing using Intel SGX.

QuickerCheck (published)

Parallel implementation of Haskell QuickCheck; A rewrite of the internal testing loop.

Program Partitioning (published)

Using GHC features to partition Choreographic Haskell Programs.

MicroPE (ongoing)

Partial Evaluation of Combinator Graphs, with a prototype integrated with MicroHaskell.

MicroHasTEE (ongoing)

Confidential Computing using MicroHaskell on Arm TrustZone enabled Microcontrollers.

PROFESSIONAL SUMMARY

A practically minded computer science researcher with a strong interest in functional programming, property-based testing, programming-languages research, and low-level systems work. While my core strengths are in Haskell and C programming, I'm versatile and enjoy working across most areas of computer science. I work well with others, communicate well, and enjoy collaboration.

PROFESSIONAL EXPERIENCE

PhD Candidate – Chalmers University of Technology

Gothenburg, Sweden

Mar 2020 – Present (expected graduation summer of 2026)

- Main supervisor: **Koen Claessen**
Co-Supervisor(s): **John Hughes, Bo Joel Svensson**
Pursued my PhD in the Functional Programming unit at Chalmers. Performed research on using functional programming to program platforms with diverse constraints, such as security constraints, real-time constraints, or memory constraints.

Teaching Experience – Gothenburg University & Chalmers University of Technology

Gothenburg, Sweden

Sep 2016 – June 2025

- Primary work as a teaching assistant in courses related to Compiler Construction, Functional Programming, Advanced Functional Programming, Parallel Functional Programming, Object-Oriented Programming.
- Acted as course responsible in Parallel Functional Programming in 2024, together with John Hughes.
- Took over as course responsible in Object-Oriented Programming in 2021, after the assigned course responsible became unavailable.

EDUCATION

PhD in Computer Science – Chalmers University of Technology

Gothenburg, Sweden Expected: 2026

MSc in Computer Science – Gothenburg University

Gothenburg, Sweden Graduated: 2020

BSc in Computer Science – Gothenburg University

Gothenburg, Sweden Graduated: 2017