

# Rikard Hjort

## Blockchain Security Engineer

Security auditor, blockchain developer, computer scientist, math geek, language nerd and general future enthusiast.

### CONTACT

**Location**  
Gothenburg, Sweden

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**Email**  
work@ostendo.org

**Email**  
<hidden>

**GitHub**  
github.com/hjorthjort

**Secret Github**  
available upon request

### SKILLS

Solidity Rust K framework Java Python  
OCaml/SML Agentic coding Systems Design Writing  
Public Speaking

### LANGUAGES

**Swedish**  
Native  
**English**  
Native  
**German**  
Everyday proficiency  
**Latin**  
Learning

### PROFILE

I work at the intersection of blockchain security, programming languages, and formal methods. My background combines smart contract auditing, formal verification, smart contract development, and academic research, with a particular interest in applying rigorous methods to real-world systems.

### EXPERIENCE

#### Spearbit (Recurring Freelance)

2024 - 2026 · Lead Security Researcher

- Performed smart contract and protocol security reviews through the Spearbit network.
- Contributed audit work for blockchain clients across DeFi and infrastructure.
- Worked alongside other senior security researchers on adversarial review and vulnerability analysis.

#### Decidable OU

2020 - 2026 · Smart Contract Developer

- Independent smart contract development and auditing, with a focus on NFTs, token contracts, and token vesting systems.
- Built and reviewed contracts for clients in the blockchain and digital asset space.
- Used Decidable as my consulting vehicle for blockchain engineering and security work.

#### Runtime Verification, Inc. (Recurring Freelance)

2019 - 2024 · Formal Verification Engineer -> Senior Formal Verification Engineer (since 2021)

- Primary developer of KWasm, a formal semantics of WebAssembly in the K framework.
- Built tooling intended for formal verification of blockchain systems running Wasm-based smart contracts.
- Worked on executable semantics and verification-oriented infrastructure for blockchain use cases.
- From 2021 onward, worked as an Ethereum and DeFi auditor, often acting as the sole auditor on an engagement or helping train newer auditors.
- Led Wasm-related workstreams and supported the development of formal verification tooling used in audits.
- Contributed formal methods expertise to smart contract security reviews and protocol analysis.
- Since 2024, have continued to act as an advisor on technical direction and strategy.

#### Google

Jun - Sep 2017 · Software Engineering Intern, Zurich, Switzerland

- Extended Calendar Interop for integrating Outlook Calendar and Google Calendar.
- Worked with Java, Python, and XML.

#### Google

Jun - Oct 2016 · Software Engineering Intern, Stockholm, Sweden

- Built experimental features in WebRTC Audio.
- Worked with C++, Python, JavaScript, and Git.

#### Varbi

May - Oct 2015 · Software Engineer, Trollhattan, Sweden

- Built integrations between Excel and a PHP/MySQL-based system.
- Improved report rendering performance by roughly five times through algorithmic improvements.
- Worked with PHP, MySQL, JavaScript, and Git.

#### Doost AB

2013 - 2014 · Communication Consultant, Malmo, Sweden

- Copywriting.
- Value-based leadership workshops.
- Brand strategy work.
- Sales.

### PROJECTS

#### Security Audits

- Selected audit work is available at [Cantina](#).
- Reviewed systems and smart contracts across DeFi, infrastructure, and application-layer crypto projects.

#### KWasm

- KWasm is a formal semantics of WebAssembly in the K framework.
- Built as a basis for formal verification of Wasm smart contracts and related blockchain applications.
- Also contributed the [EWasm embedding](#) for the Ethereum-Wasm effort.

#### %quiz and KNoack

- Built a property testing framework for Urbit called [%quiz](#).
- Built formal-semantics-related tooling around Nock, the VM and development languages for Urbit.
- Worked on connecting semantics-driven reasoning with testing-oriented tools for the Urbit ecosystem. The Urbit project petered out before we could finish.

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## EDUCATION

### Chalmers University of Technology

*Master's Degree in Computer Science, Algorithms, Languages and Logic - 2018 - 2020*

- Graduated as valedictorian.
- Thesis: [Formally Verifying WebAssembly with KWasm - Towards an Automated Prover for Wasm Smart Contracts](#)
- Coursework included advanced programming language concepts such as DSLs, type engineering, parallel functional programming, and compiler construction.
- Mathematics and theory coursework included cryptography, abstract algebra, formal logic, game theory, neural networks, and stochastic optimization.

### The University of Tokyo

*Exchange Master's Studies - 2017 - 2018*

- Coursework included blockchain, programming language implementation, algorithms, security, physics simulation, and Japanese.

### Chalmers University of Technology

*Bachelor's Degree in Software Engineering - 2014 - 2017*

- Graduated as valedictorian.
- Thesis: [The CakeML Compiler Explorer: Visualizing how a verified compiler transforms expressions](#)
- Coursework included programming, algorithms, formal languages, interface design, and agile project management.

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## PUBLICATIONS

### A Proposal of Blockchain-Based Electronic Voting System

- Adiputra, C. K., Hjort, R., Sato, H. (2018)
- [2018 Second World Conference on Smart Trends in Systems, Security and Sustainability \(WorldS4\)](#)

### The CakeML Compiler Explorer: Tracking Intermediate Representations in a Verified Compiler

- Hjort, R., Holmgren, J., Persson, C. (2018)
- [International Symposium on Trends in Functional Programming](#)

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## TALKS

### Invited Talks And Appearances

- Ep. 39 Rikard Hjort from Runtime Verification - Whiteboard Series with NEAR Protocol
- [KWasm: Formal Verification for fun and profit - Science! by Infotiv](#)
- [K Framework for Smart Contract Formal Verification - ETH Warsaw](#)
- [Real-world Formal Verification of Smart Contracts using the K Framework - IEEE International Conference on Blockchain and Cryptocurrency 2020](#)
- [Introduction to the K Framework and KSolidity - Solidity Summit 2020](#)
- [Formal Verification and Smart Contracts - chat with Rikard Hjort - Blockchain PR Podcast, 2020](#)
- [Introduction to K-Michelson - Tezos Smart Contracts: Programming Languages and Formal Verification Workshop, Paris 2020](#)
- [The future of KEwasm: Lightning talk - Devcon 2019, Osaka](#)
- [KWasm - Wasm on the Blockchain, Berlin 2019](#)
- [Hur funkcar blockchain? En introduktion for programmerare. - Chalmers University of Technology, 2019](#)
- [K framework and WebAssembly to KWasm - Chalmers University of Technology, 2019](#)

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## SUPERVISION

### Thesis And Degree Supervision

- Burak Bilge Yalcinkaya - *A Formal Semantics for Javalette in the K framework*, 2022, Chalmers University of Technology, [M.Sc. Computer Science, Algorithms, Languages and Logic](#)
- Katherine Hoy - *Continuous Narratives in Kinetic Theater: A Study on the History of Puppetry in Popular Theater and Performance Space Defined Through the Use of Automaton-Marionettes*, 2022, University of Europe for Applied Sciences - Art and Design, M.A. Media Spaces
- Anton Ahl - *KHoon: A Formal Semantics of Hoon in the K Framework*, 2023, Chalmers University of Technology, [M.Sc. Computer Science, Algorithms, Languages and Logic](#), [Chalmers ODR](#)

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## AWARDS AND COMMUNITY

### Awards

- John Ericsson honorary medal, awarded each year to the 6 highest-achieving recent graduates from Chalmers University of Technology.

### Community

- Student Union Council
- Chalmers Student Union IT Strategy Committee