

Fredrik

Lead Rust Software Engineer

Experienced Software Engineer with over 20 years of professional expertise, spanning development, advanced troubleshooting, field application engineering, and Tech Lead.

In the past three years, I have focused on Rust and blockchain projects. Previously, I built my career in the Embedded and Mobile industries across Europe and Japan.

Currently Rust is my focus, but I do have hands-on experience with a wide range of languages, including C, Kotlin, Perl, Bash, Python, C++, Typescript, and technologies such as Prometheus, Terraform, and Docker.

Key achievements

- Lead the development team implementing an Inhouse Rust Order-book for in record time, before PoC demonstration when collaboration with intended vendor broke down.
- Created the system to batch submit a high number of extrinsics on Nodle's substrate chain – increasing the capacity from a handful to thousands of transactions per block.
- Architect and developer of the back-end driver of branding feature (Exlider) of Fujitsu's 2017 premium model smart phone (F01K) – to use fingerprint sensor as an input device. A large portion of this success comes down to the trust and close collaboration with Fujitsu's development team.

Work Experience

Nodle **Blockchain Developer** **2022-2024**

Created the system to distribute a high volume of rewards for network participation on chain. To overcome chain limitations custom pallet, were used to batch 3500 transactions in one block compared to standard extrinsics less than 100. Designed and architecture with a robust pubsub message protocol, implemented in Rust deployed on Gcloud run, and agreed with connected services on how to automatically handle faults, disturbances on chain and in environment. JSON logs facilitated quick and accurate debugging, in all this ensured service stability stopped being a problem.

Running one of the busiest parachain in the Polkadot ecosystem, maintaining runtime upgrades, and collator nodes.

Contributed patches upstream to substrate and subxt.

Polkadex **Lead Engineer** **2021-2022**

Lead development team spread over 7 timezones building a high frequency trading platform, an order book running on secure enclave for the Polkadex block chain. Implemented several key features.

Recruited software developers, Handled coordination with outsourced cloud engineering / DevOps team.

Coordinated external audit of the complete software system and ensured all concerns were addressed before release.

Toposware **Lead Software Engineer** **2021-2021**

Lead a Software development team with both local and remote engineers, transitioned the team from chaos into a functional agile methodology and trained the engineers in Rust development.

Developed pallets, extrinsics, off-chain-workers and customized substrate runtime in Rust. Designed the bootstrapping flow for a ecosystem with independent communicating blockchains.

株式会社 DDS **Technology Development Engineer, Nagoya** **2019-2020**

Integrated image sensor in Android and Linux platforms. Created a demonstration App in Kotlin visualizing and showcasing different biometric sensor configurations and performance, created a service in C++ and optimized Linux kernel device driver in C.

Fingerprint Cards **Field Application Engineer, Tokyo** **2015-2018**

Supported all Japanese mobile phone manufactures (Sony, Sharp, Fujitsu and Kyocera) with integration of fingerprint sensors in Android phone projects.

Held system integration training sessions for APAC chip distributors.

Led cross site, cross functional teams in solving customer related issues and implementing feature requests.

Built proof of concept device with Nordic embedded MCU and software in Rust, demonstrating for a customer, how to integrate fingerprint sensor. Developed software customization of Fingerprint recognition software and supported customer's RnD teams integrating the software into embedded (CortexM4 STM32, NXP and Nordic MCU) and mobile products.

SONY Mobile **Senior Software Developer, Lund Sweden** **2014-2015**

Flash and Security, and Boot-loader development for Xperia. Implemented fastboot in boot loader for android wearable device.

Set up an automatic build system flashing SW to phones, running automated tests and speed up manual testing steps.

Nokia/Renesas Mobile **Software Engineer, Copenhagen** **2008-2013**

LTE modem development: Developed software driven simulation and verification system, in C++ VHDL and System-Verilog, for SoC development to ensure error free RTL-code at tape out on schedule.

Introduced Continuous Integration for both ASIC design and software development. Created, maintained and operated a php/MySQL backed Jenkins interface to legacy build and version control systems, with over 100 build nodes.

Sony Ericsson **Software Troubleshooter, Lund Sweden** **2007-2008**

Debugged the monolithic phone software when in depth source code debugging or an oscilloscope was required, Lauterbach and post mortem debugging. Removed showstopper bug treating to block production of 300k units.

Ericsson Mobile Platforms **Software Engineer, Lund Sweden** **2005-2007**

Lead a team of four programmers developing internal productivity automation tools in an agile process.

BFM AB, Malmö **Software and Electronics Design Engineer** **2003-2005**

Developed wireless IoT temperature sensor, the development team was very small so I designed and implemented the electronics RF circuitry and the Software Architecture – everything down to PCB. The sensor which could be installed by janitor with minimal training. The total cost of deployment was less than a third, compared to installing wired installation done by a certified electrician.

Axis Communications **Software Developer** **2000-2000**

Ported an open source software to Linux environment (ETRAX100LX) and developed a web based user interface written in C and javascript to integrate it.

Other

2013-10-26 **Freelance** **Freelance consultant and lecturer**

Lightning speech “How to start debugging javascript in Firebug” at Danish guild of Engineers’ conference “Debugging for real programmers”

Education

2003-06-04 **Lund University** **MSc Computer Science and Engineering**

Thesis: Impact of VHDL Design Methodology on Critical Cost parameters.