

Alexander Sellström

Full Stack Software Engineer | Protocol Developer



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PROJECTS

EMERALD | RUST, SUBSTRATE, FRAME, IROH

2022 - Present

- **2025 ETHGlobal Buenos Aires hackathon first place in Symbiotic's track.** Built stake-secured data availability attestation. See the project [here](#).
- **Third place at the Web3 Summit 2025 Berlin hackathon's Kusama track.** My first hackathon. I built the blockchain runtime and off-chain data protocol. X post [here](#).
- I won both hackathons solo.
- Read the WIP litepaper [here](#).
- A peer-to-peer imageboard protocol built with Substrate and iroh. Emerald consists of a layer 1 blockchain for storing Merkle roots of posts and a bespoke peer-to-peer content distribution network.
- Working on this project has taught me a lot about protocol design, such as game theory and ways to use various cryptographic primitives, such as zero-knowledge proofs, commit-reveal schemes, BLS, KZG, and more. I have learned frameworks such as Substrate, FRAME, and iroh.

BACHELOR THESIS: AUGMENTED AUDIO | TYPESCRIPT, NODE.JS, REACT, EXPO,

MONGODB, IBM WATSON

Apr 2021 - Jun 2021

- A system for creating, sharing, and listening to interactive audiobooks. The system featured a web application (React, Node.js) for story creation and a mobile application (React Native, Expo) for playback with sensor-based interactions; my primary responsibility was the mobile application, particularly implementing speech-to-text functionalities using IBM Watson. This academic project involved improving an existing system by adding new interaction possibilities and enhancing the user interface.
- Read the report [here](#).

EXPERIENCE

ADVATAR SYSTEMS AB | SOFTWARE ENGINEER | SOLIDITY, TYPESCRIPT, FLUTTER/DART,

PYTHON

2022 - Present

- Deliver a multi-client platform ("ARK Platform") that converts any digital file or Git commit—created online or offline—into a blockchain-anchored, provably owned, collaboratively authored, revenue-generating asset ("ARK"). Article on ARK [here](#).
- In addition, specializing in mobile apps on Android, Digital Identity and Verifiable Credential Infrastructure Projects.

CERTIFY HEALTH | TEST ENGINEER

2021

- Wrote unit tests for SaaS to issue EUDCC Covid Certificates.

VOLUNTEER & ELECTRICAL INFRASTRUCTURE MANAGER FOR

POLHACKS | "POWER"

Oct 2017 - Oct 2018

- In my role as Volunteer Manager for Polhacks, I was instrumental in coordinating the volunteer workforce that brought our dynamic gaming events to life. Polhacks is a significant annual festival organized by the Uppsala Union of Engineering and Science Students, attracting hundreds of attendants and visitors, focusing on tournaments in competitive video games, board games, and fostering a vibrant gaming community.

SKILLS

LANGUAGES

Hailing from Sweden, but born to an American parent, I speak Swedish and English natively. I also have dual citizenship.

PROGRAMMING

Proficient:

Rust • TypeScript • Python
CSS • HTML • Haskell • L^AT_EX

Experienced:

Solidity • C# • Java • SQL • Dart

Familiar:

C • C++ • MIPS Assembly

LIBRARIES/Frameworks

Substrate/FRAME • Svelte
Node.js • Flutter • Astro
Expo • Django • Pandas
MongoDB • Tensorflow
iroh • Godot • Unity

TOOLS/PLATFORMS

Git • Docker • Podman
Google Firebase • Azure
OpenStack • MATLAB
Various AI tools

EDUCATION

POLKADOT BLOCKCHAIN ACADEMY: CAMPUS

Lucerne University of Applied Sciences and Arts

PROTOCOL TRACK, WAVE 6

March - April 2025 | Lucerne, Switzerland
Completed

UPPSALA UNIVERSITY

MASTER'S PROGRAM IN COMPUTER AND INFORMATION ENGINEERING

Sep 2017 - | Uppsala, Sweden

Cum. GPA: 3.61

View my courses and grades [here](#).

DANDERYDS GYMNASIUM

ADVANCED MATHEMATICS PROGRAM

Sep 2013 - Jun 2016 | Danderyd, Sweden