

# Hunter Lindauer

[holindauer@gmail.com](mailto:holindauer@gmail.com) | [www.linkedin.com/in/hunter-lindauer](https://www.linkedin.com/in/hunter-lindauer) | 206.673.1120 | Seattle, Washington | U.S. Citizen

## Summary of Qualifications:

Driven programmer with experience implementing zero knowledge proof schemes and low level cryptographic primitives. Strong passion for zero knowledge cryptography, compilers, and computer architecture.

## Technical Skills:

### Coding Languages

- Rust, C++, C, Haskell, Python, Circom, Futhark, Solidity, Go, Shell, x86-64, MIPS, Verilog

### Technology and Tooling

- CI/CD pipelines, Integration Testing, Unit Testing, Performance Benchmarking, Linux, Git, Open Source Contribution, Parallel Computing, GPU Programming, Hardware/Electronics, FPGA, AI/ML, Pytorch, Shell Scripting,

### Leadership/Communication

- Strong Declarative Writing, Self Learning, Leadership, Strategy

## Experience:

### Open Source Contributor | Triton-VM/Neptune | July 2024-Present | <https://github.com/Holindauer/ruthark>

- Implementing **GPU accelerator** for Triton-VM, a zero knowledge virtual machine (cryptographic proof scheme for verifying computational integrity on arbitrary computation without revealing secret inputs/internal state).
- Ported from original **Rust** implementation into **Futhark**, a data-parallel purely functional programming language that can be compiled to Cuda/OpenCL.
- Utilized technical understanding of Computer Architecture, Zero Knowledge Cryptography, and **ZKSTARKS**.

### Research Assistant | Sensor Systems Lab, University of Washington | May-Jul 2024

- Assembled **acoustic levitator** device from bare components
- The device consisted of four curved ring speaker faces, each supporting an array of 84 transducers via FPGA.
- Worked with an I2C master-slave protocol to dispatch updated frequency and phase modulation instructions computed on a Raspberry Pi to the four FPGAs.
- Worked with **Python** and **Verilog** to write control code for levitated objects.

### Research Assistant | Casas, AI Lab + Neuro-Psychology and Aging Lab | Jan-May 2024

- Collaborated with Neuro-Psychologists on feature engineering, data cleaning/aggregation, and applications of machine learning.
- Researched Gerontechnology solutions that utilized "smart-home" activity sensor data to predict potential Alzheimer's related complications while preserving elderly independence.

### Teaching Assistant, Intro to CS | Washington State University | Sep 2023 - Dec 2024

- Led weekly lab and graded exams for intro to computer science in Python.

## Projects:

### Groth16 ZKSNARK Implementation | Python | <https://github.com/Holindauer/Groth16-zkSnark>

- Implemented Groth16 **ZKSNARK** algorithm, a zero knowledge cryptographic proof scheme that can verify computational integrity in constant time without revealing information about input or internal state.

### LAN Blockchain | Rust | <https://github.com/Holindauer/miniBlockChain>

- Implemented peer to peer blockchain network from scratch that operates over LAN via TCP.
- Designed consensus protocol to ensure at least 51% of the network agrees on all transactions entering the network.
- Utilized zero knowledge proof scheme to verify ownership of private accounts.

### C Compiler | Haskell | <https://github.com/Holindauer/C-Compiler>

- Implemented C Compiler in Haskell from scratch that compiles C to x86-64.
- Designed Lexer, Parser, and Code Generator from scratch.

### Automatic Differentiation Implementation | C | <https://github.com/Holindauer/AutoGradC>

- Implemented Automatic Differentiation in C from scratch to compute the gradient of arbitrary computation.

### SHA256 and Merkle Tree Implementation | C++ | <https://github.com/Holindauer/MerkleTree>

- Implemented **SHA256** hash function and used it to create Merkle Tree for efficient inclusion proofs for large datasets.

## Education:

- Bachelor of Science in **Computer Science**, Minor in **Mathematics**, Washington State University. **May 2026. GPA: 3.9.**
- Leadership: Ethics Bowl Co-Captain

## Relevant coursework:

- Computer Architecture, Data Structures, Differential Equations, Calculus Series, Linear Algebra with Applications, Discrete Math