

Joss Duff

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About

I'm a Rust engineer passionate about creating a more fair financial system for the world.

Education

Lehigh University - B.S. in Computer Science and Business (honors)

August 2019 - May 2023

Courses: Blockchain Algorithms, Blockchain Concepts, Operating Systems, Database Systems, Algorithms, Game Theory

Experience

Software Engineer - [Sigil L2](#) (OP-Stack, Rust)

September 2024 - Present

- Deployed OP-Stack rollup that fed blocks into a Succinct ZKVM to generate zero knowledge proofs of EVM execution
- Modified Succinct's op-succinct to allow for local CUDA accelerated proofs
- First stage 2 general purpose ZK rollup via implementing an exit window
- Deployed Blockscout block explorer

Software Engineer - [Envio Indexer](#) (Rust, Kubernetes)

October 2023 - September 2024

- Contributed low level rust optimizations to our embedded database
- Implemented read methods of the Ethereum JSON RPC standard
- Upgraded our EVM specific embedded database to support alternate VMs & chains
- Deployed backup Kubernetes cluster on bare-metal servers

Researcher & Developer - Lehigh University (C)

August 2022 - May 2023

- Member of Lehigh's Scalable Systems & Software Research Group
- Modified Stellar Consensus protocol into a hierarchical consensus mechanism for central bank digital currencies
- Read and discussed published research papers in the database, distributed system, and parallel computing fields

Smart Contract Developer - [ChainBytes](#) (Solidity)

January 2022 - December 2022

- *Won best overall* at Lehigh's 2022 Computer Science capstone project fair
- Undergraduate capstone project mentored by the blockchain advisor to the President of El Salvador to verify fair payment of wages to coffee laborers in El Salvador
- Designed, developed, tested, and deployed Solidity smart contract on an Ethereum Goerli testnet and a subgraph on theGraph network
- Maintained team's Hardhat repo for smart contract and subgraph development

Projects

[DeFi Liquidation Bot](#) (Rust, Solidity)

August 2024

- Designed and wrote a liquidation bot targeting Compound V2 lending protocol forks
- Flash loan solidity smart contract to liquidate accounts of any size

[SemiSwap](#) (Solidity)

September 2022 - December 2022

- Designed, wrote, and tested a simple AMM to be used as the reference solution for the Blockchain Algorithms and Systems class I graded for
- Wrote up an assignment description based on the reference solution I made to give my students a challenging but rewarding assignment

Leadership

Grader, Course Designer, Lecturer - Blockchain Algorithms and Systems

August 2022 - December 2022

- Graded assignments of 60+ students
- Designed, wrote, tested, and assigned class Solidity Automatic Market Maker project (see projects: SemiSwap)
- Gave a lecture on EVM overview and smart contract languages Solidity, Vyper, Yul, Reach, PyTeal, and TEAL

President - Lehigh Blockchain Club

October 2021 - May 2022

- Led educational discussions with students about blockchain and cryptocurrency topics
- Recruited 100+ members