

Joss Duff

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Education

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

August 2019 - May 2023

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

Skills

Rust, Solidity, theGraph, Redis, C, C++, JavaScript, ReScript, Java, MySQL, Hardhat, Foundry, Git

Experience

Smart Contract Developer - ChainBytes

January 2022 - December 2022

- Undergraduate capstone project mentored by Eric Grill, ChainBytes CEO and 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.
- WON best overall capstone project out of 30+ projects at Lehigh's 2022 computer science capstone fair.
- Maintained team's Hardhat repo for smart contract and subgraph development.

Smart Contract & Backend Developer Intern - Float Capital

June 2022 - August 2022

- Built a custom indexer using GraphQL, Apollo, and ReScript to save emitted events and verify event data against data collected by subgraph.
- Designed, wrote, and tested Solidity smart contract for Protocol Owned Liquidity dapp.
- Developed and tested subgraph on theGraph network for Protocol Owned Liquidity smart contract.

Projects

Rust Engineer - High Performance Liquidation Bot

August 2023 - Present

- Designed and wrote a liquidation bot targeting Compound V2 lending protocol forks.
- Flash loan solidity smart contract to liquidate accounts of any size.
- Custom Rust indexer utilizing high speed in-memory Redis database.

Smart Contract Developer - SemiSwap

September 2022 - December 2022

- Designed, wrote, and thoroughly tested an ERC-20 to Ether Automatic Market Maker DEX to be used as the assignment 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.

Researcher & Developer - Hierarchical Consensus

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.
- Reading and understanding published research papers in the database, distributed system, and parallel computing fields.

Smart Contract Developer - Algorand Crowdfunding

January 2022 - May 2022

- Taught myself how to use the Reach platform to create a decentralized crowdfunding application.
- Learned about development on the Algorand blockchain with the community and docs.
- Published tutorial of the process of building this dapp on the official Algorand developer portal with Algorand dev advocate Russ Fustino.

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 comparison of EVM and AVM as well as 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.
- Organized and planned club meetings and events.
- Recruited 100+ members.