Mukul Periwal

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Education

Drexel University, Philadelphia, PA January 2021 – June 2025
Bachelor of Science in Physics, Pennoni Honors College *Cumulative GPA: 3.98*

Relevant Coursework: Data Structures and Algorithms, Mathematical Foundations of CS, Adv. Programming Tools and Techniques, Differential Equations, Linear Algebra, Probability and Statistics, Electromagnetic Fields, Classical Mechanics, Quantum Mechanics, Big Data Physics

Experience

Blockchain Research Engineer | ***TypeScript, JavaScript, Python, Bash*** March 2022 – September 2022
Genesis Global Trading *New York City, NY*

- Worked closely with the VP of cryptography to research protocols for 10+ cryptocurrencies
- Co-authored fully functional proof of concept projects to facilitate transactions among blockchain participants
- Identified patterns to draw out similarities in different cryptocurrency implementations to promote re-usability
- Implemented novel features of these cryptocurrencies to aid the primary research

Computer Science Teaching Assistant | ***JavaScript, Python*** September 2021 – Present
Drexel University *Philadelphia, PA*

- Lead weekly lab discussions and hold office hours to help students put their learning into practice
- Teach students the underlying fundamental programming principles to aid them in problem-solving
- Grade the laboratory and homework assignments with detailed feedback in appropriate timeline

Undergraduate Research Assistant | ***Python, C++*** June 2021 – March 2022
Physics Department, Drexel University *Philadelphia, PA*

- Researched under Dr. Neilson, PhD, to assist Scintillation Bubble Chamber collaboration to detect dark matter
- Calculated the economic feasibility for potential moderators required to slow down the bombarding ^{14}Ar neutrons
- Utilized Geant4, which primarily follows Monte Carlo principles, to simulate experiments with controlled variables
- Designed and developed python scripts leveraging Big Data methodologies to visualize and comprehend the results

Projects

Codis | ***Go, Typescript***
- Built a multi-party signature scheme for two Digital Signature Algorithms in a team of five
- Exploited peer-to-peer system to enable different shareholders of one Digital Account to securely sign transactions

Database Contract | ***Solidity, Typescript, Hardhat***
- Programmed a smart contract on EVM to store the data of a user, their friend list and messages on blockchain
- Deployed the contract using hardhat on lukso L16 testnet and interacted with it to build a chat dapp

Cafe Database | ***Flask, SQL, HTML***
- Created a Rest API database to store the details of cafes in a city
- Implemented the functionality of accessing and updating the database for users owning a valid API key

Technical Skills

Languages: Python, TypeScript, JavaScript, C, HTML/CSS, VPython, LaTeX, Bash, Solidity
Frameworks: Flask, RestAPI, Bootstrap, SQLAlchemy, Jinja2, express
Developer Tools: Git, JetBrains, Google Collaborate, VSCode
Libraries: ethers-js, web3.js, Pandas, NumPy, Matplotlib, Selenium, Turtle, SMTPLib
Operating Systems: Windows, Linux, Mac OS

Awards and Involvement

Larson Endowed Scholarship, 2021 – 2022
Dean's List, 2021 – Present
Society of Physics Students, Member, 2021 – Present
Drexel Blockchain Organization, Member, 2022 – Present