

NIMAI PATEL

State College, Pennsylvania

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Education

The Pennsylvania State University

Master of Science in Computer Science and Engineering

August 2023 – Present

State College, PA

University of Mumbai

Bachelor of Technology in Information Technology CGPA: 9.22/10

August 2019 – May 2023

Mumbai, India

Experience

Meshnet Electronics

Embedded Systems Engineer

March 2022 – March 2023

Mumbai, India

- Spearheaded the implementation of over-the-air updates, NTP time synchronization, remote and serial configuration of SOC's, and seamless Modbus communication using C++ and C on the ESP32 microcontroller.
- Orchestrated the design of all components with a focus on minimal coupling, ensuring seamless integration into any project with a significant reduction in development time.
- Led comprehensive testing initiatives, including conducting 20+ range tests, achieving 98% accuracy in sensor calibration, and conducting OTA reliability testing that led to a 40% increase in system stability.

Tata Advanced Systems Limited

Cybersecurity Project Intern

July 2022 – April 2023

Mumbai, India

- Engineered a robust SOC for TASL by integrating Wazuh, Suricata, and Graylog through the application of Python, Unix scripting, and PowerShell scripting, resulting in 40% faster incident response times.
- Customized attack vectors for IT infrastructure using Caldera, delivering comprehensive security coverage, and generated reports with explanatory graphs and tables automatically using Python scripts.
- Attained 100% automation for system deployment using Python and shell scripting which resulted in a remarkable 75% reduction in deployment time, enhancing overall security and operational efficiency.

The Pennsylvania State University

Learning Assistant for CMPSC 311

August 2023 – Present

State College, PA

- Graduate Learning Assistant for CMPSC 311 – Introduction to System Programming
- Conducting effective office hours, addressing students' doubts regarding C and Unix programming, solving environment setup-related issues, and grading papers and assignments

Projects

Rideshare – Decentralized Ride-hailing System [\[DOI\]](#)

- Used the Ethereum blockchain and Interplanetary File System (IPFS) to decentralize cab bookings, resulting in an almost 100% reduction in middlemen involvement, potentially enhancing efficiency and cost-effectiveness in the real world.
- Developed a user-friendly front-end using Flutter and Dart, ensuring an intuitive experience for users. and conducted rigorous testing to guarantee the platform's reliability and user satisfaction.
- Crafted smart contracts in Solidity to facilitate secure and transparent transactions and Implemented IPFS server code in Node.js, to enhance data storage and retrieval efficiency.

Open Source Projects & Contributions

- Developed [brn](#), a one of its kind C-based sys-admin utility that can be used to bulk rename files easily. It handles cycles in name changes gracefully using the `renameat2` system call on Linux.
- Contributed to various Lua-based plugins for the Neovim text editor.
- Designed patches for [X11 terminal emulator](#) and [window manager](#) that added features such as live config reloading using UNIX signals.

Technical Skills

Languages: C, C++, Python, Rust, JavaScript, SQL, HTML, CSS, \LaTeX , Bash, PowerShell, Lua

Web Technologies: React, NodeJS, AWS, Firebase, MongoDB, Flutter, Bootstrap, WordPress, Tailwind CSS

Data Science: Tableau, Pandas, Numpy, SciPy, Matplotlib

Embedded Systems: ESP32, IDF, Arduino **Blockchain Development:** Solidity, Ganache, Truffle