

# NIMAI PATEL

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Website: [nimaipatel.github.io](https://nimaipatel.github.io)

GitHub: [nimaipatel](https://github.com/nimaipatel)

## EDUCATION

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### The Pennsylvania State University

2023 - 2025

- Master of Science in Computer Science and Engineering

### D.J. Sanghvi College of Engineering

2019 - 2023

- B.Tech IT Engineering CGPA **9.22/10**

## SKILLS

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### Programming Languages

- C, C++, Rust, UNIX shell script, Python, JavaScript, Lua,  $\text{\LaTeX}$ , Solidity

### Tools

- Git, GNU/Linux, make, cmake, flex & bison, UNIX and GNU core utilities, Vim, gdb, Hadoop

### Web and Mobile Development

- React, Node.js, Flutter and Dart, MongoDB, PostgreSQL, Web Sockets, RESTful APIs

### Embedded Systems

- ESP32, IDF, Arduino

### Blockchain Development

- Ganache and Truffle suite, Ethereum development with Solidity

## EXPERIENCE

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### Embedded Systems Engineer at Meshnet Electronics

Since March 2022

- Implemented over-the-air updates, NTP time syncing, remote configuration of SOCs, serial configuration of SOCs, communication over modbus
- Designed all components with minimal coupling so that they could be put into any project with little effort
- Conducted testing efforts which included range testing, sensor calibration and OTA reliability testing

### BAS and SOC project Intern at TASL

Since July 2022

- For my senior year capstone project, I am developing a breach attack simulation software and security operations center for Tata Advanced Systems Limited
- Drafting a review paper about existing BAS systems and will be submitting it to the *9th Somaiya International Conference on Technology and Information Management*

### Learning Assistant CMPSC 311 – Introduction to Systems Programming

Since August 2023

- Holding office hours, solving doubts and queries related to assignments and course material, and grading assignments

## EXTRA CURRICULAR ACTIVITIES

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### Conducted lectures for Operating Systems Course

- Taught classes of 60+ students each about shell scripting, terminal commands, operating system pipes, virtualization and automation under guidance of Prof. Sharvari Patil

### Technical Head of Computer Society of India at College

December 2020 - August 2022

- Mentored a team of 5 sophomores in various projects that we take up for the college's CSI chapter
- Maintained and developed the various websites and server side software that CSI uses
- Organized multiple events including hackathons, competitions and workshops

### Instructor at Competitive Programming Club

October 2020 - July 2021

- Organized and conducted lectures for freshmen students, including ones with non-CS backgrounds
- Covered basics of C programming and taught concepts like for-loops, if-else statements, arrays, and introduced beginner competitive programming problems

### Technical Team Member at Literature Society

September 2020 - August 2021

- Automated routine server tasks and maintained the CMS based website
- Organized literature related events and handled technical aspect of online events during the COVID-19 pandemic

## PROJECTS AND PAPERS

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### Rideshare - a decentralized ride-hailing system

- Rideshare is a decentralized ride-hailing system that runs on mobile devices

- It uses the *Ethereum* block chain and *Interplanetary File System* to decentralize the process of booking a cab to minimize the involvement of middle-men
- Authored a paper on the same and submitted to *4th IEEE Bombay Section Signature Conference*. The paper is accepted for oral presentation and will be published in *IEEE Xplore*.
- Repository link: <https://github.com/nimaipatel/ipd>

#### **brn – bulk rename utility**

- This is a text editor based bulk rename utility written in C for GNU/Linux, it lists all the file names in a text buffer from where they can be easily bulk renamed using advanced editing capabilities
- Compared to similar programs written in scripting languages, brn can handle name swapping using GNU/Linux's `renameat2` system call
- Repository link: <https://github.com/nimaipatel/brn>
- Package published on Arch Linux's AUR: <https://aur.archlinux.org/packages/brn-git>

#### **dwm, st and dmenu**

- These are my forks of C-based X11 window manager, terminal emulator and menu generation utility, patched with features such as on-the-fly configuration changes using UNIX signals
- Repository link: <https://github.com/nimaipatel/st>

#### **Various web applications developed for the college and as part of hackathons**

- Official Website of College's CSI Student Chapter, running at: <https://djcsi.co.in>
- Leaving Certificate and Railway Consession generation system: used by students to request railway concession from the college and generating leaving certificates
- FindIt – A Lost & Found Management tool: This was my team's submission to CSI's hackathon, repository: <https://github.com/nimaipatel/findit>
- StackReview – A code review website: this was my team's submission to OAuth's 2020 Hackathon, repository: <https://github.com/stackreview>