ANSHUL DALAL

Email: anshulusr@gmail.com **Phone:** +91-8950722171 **Website:** https://archusr64.github.io
LinkedIn: https://www.linkedin.com/in/anshul64 **Location:** Chennai, India **Github:** https://github.com/ArchUsr64

EDUCATION

SRM Institute of Science and Technology **Bachelor of Technology,** Computer Science and Engineering
Chennai, India **Jul, 2021 - May, 2025**

- Cumulative **GPA**: 9.4 / 10

WORK EXPERIENCE

Software Engineer | Tesla Lab - SRM Next Tech Lab **Nov, 2022 - Present**

- Gained experience in GPU programming with GLSL language within the Miniquad OpenGL context using Rust
- Acquired proficiency in utilizing OpenOCD and GDB for embedded software debugging

Embedded Systems Engineer | Spaced Domain - SRM Team Robocon **Apr, 2022 - Aug, 2022**

- Designed and implemented stepper motor drivers in C++ with full and half drive capabilities
- Created embedded program for differential drive in motor-controlled system

PROJECTS

Ortholinear Keyboard, 38-key keyboard from scratch, offering complete customization and workflow efficiency [LINK]

- Implemented one-shot modifiers to enable rapid activation of keyboard shortcuts, enhancing productivity
- Incorporated multiple layers, allowing users to effortlessly switch between custom key mappings and functionalities
- Integrated mouse input support, transforming the keyboard into a multifunctional input device for seamless navigation

Sudoku Solver, application using client-server architecture for solving sudoku [LINK]

- Developed a Python-based GUI client, providing users with an intuitive interface to input puzzles and view solutions
- Enabled TCP/IP communication between the server and client, facilitating seamless data exchange

6502 Emulator, equipped with graphics and input capabilities using Macroquad library in Rust [LINK]

- Created a 6502 emulator in Rust, accurately simulating the behavior of the classic 6502 microprocessor
- Utilized Miniquad to implement graphics capabilities, delivering a 32x32 8-bit color grid display

CNN Library, implemented forward and backward propagation in C and data structures for Linear Algebra [LINK]

- Utilized the MNIST dataset, a benchmark for digit recognition tasks, to validate the library's performance
- Ensured the library's modularity and extensibility for future integration into various machine learning projects

Toggle Perspective Fixed, bug fix mod for the popular block game Minecraft [LINK]

- Developed in Java for Minecraft version 1.8.9, addressing a persistent bug related to the toggle perspective keybind
- Implemented a solution to fix the bug, enabling players to smoothly switch between first-person and third-person view

Tic Tac Toe, local multiplayer NxN tic tac toe game using TypeScript [LINK]

- Implemented CI/CD pipeline with GitHub Actions, automating the compilation and deployment to GitHub Pages
- Utilized CSS to dynamically style the game grid, creating a responsive layout for an enhanced user experience

Wavefront Viewer, displays wireframe of a model using SDL2 in C++ [LINK]

- Ensured smooth execution by effectively handling OBJ file parsing and wireframe rendering algorithms
- Implemented user inputs to generate transformation matrices for model manipulation in world space

4-bit CPU, a turing complete CPU using Harvard architecture built on simulator.io [LINK]

- Implemented hand-wired Control Unit to achieve proper timings for instruction execution pipeline

Open Source Contributions :

helix-editor/helix, Fixed buffer overflow error due to out of bounds gutters

rp-rs/rp-hal, Fixed integer overflow due to high UART baud rate

zellij-org/zellij, Reported an issue about improper handling of focus change events

Certifications :

Problem Solving, Certified by HackerRank **Nov, 2022**

Python, Certified by HackerRank **Jul, 2023**