Rahul Dharmaji

Undergraduate Student – Computer Engineering
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Education

University of California, Santa Barbara

B.S. Computer Engineering · GPA: 3.86 ····· 9/19 – 6/23 (expected)

Data Structures & Algorithms, Computer Vision, Application Programming, Sensor and Peripheral Design, Analog/Digital Circuits & Systems, Boolean Algebra, Digital System Design, Discrete Math, Linear Algebra, Differential Equations, Vector Calculus, Probability & Statistics

Skills

- Daily user of `arch/i3` as a Linux development environment
- Frequent usage of `vim`, `git`, and `make` for personal coding projects
- Experience in shader development with `OpenGL+GLSL`
- Skilled in building desktop applications with `C/C++`
- Heavy user of `LaTeX` to write reports and format data
- Able to develop for embedded systems using `Verilog/C`

Projects

`meikyuu` – Modular Game Engine · C/C++/GLSL (private repository) ····· 7/20 – present

Using `GLSL`, and the `raylib` API, created shaders to simulate a volumetric fog effect on a 2D plane using Fractal Brownian Motion as a means to conserve compute capability over similar 3D effects. Implemented a Gaussian Blur shader with variable kernel parameters. Designed a robust adjacency detection algorithm for tile-based mazes.

`nodumi` – Graphical MIDI Visualization · C++ (– iikare/nodumi) ····· 6/20 – present

Using open-source MIDI-handling APIs, built a desktop application to visualize live and prerecorded MIDI input. Created custom UI workflows to optimize user experience.

Experience

Valkyrie Robotics

STEM Mentor, Director of Media ····· 3/18 – present

Assisted in fulfilling logistics and operations management for the organization by supervising students in the workshop. Worked with the organization's recruitment committee to help expand membership. Provided graphic design and media support by designing flyers and posters for organization events.

Vyu Labs, Inc.

Software Engineering Intern ····· 6/20 – 9/20

Installed, tested, and certified development builds for iOS and Android. Ran debugging tools with breakpoints to identify bugs in unit test cases. Adjusted live streaming parameters (bitrates, framerates, resolutions, etc.) to determine optimal rendering configurations for mobile phones, tablets, and laptops. Logged bugs with developers and pushed builds onto QA servers.