Rahul Dharmaji

Undergraduate Student – Computer Engineering
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Education

University of California, Santa Barbara

B.S. Computer Engineering · GPA: 3.88 ·· 9/19 – 6/23 (expected)

Data Structures & Algorithms, Automata & Formal Languages, Real-Time Embedded Systems, Computer Architecture, Computer Vision, Digital Signal Processing, Digital Design Principles, Analog/Digital Circuits & Systems, Sensor & Peripheral Design

Skills

- Daily user of `arch/i3` as a Linux development environment
- Frequent usage of `vim`, `git`, and `GNU make` for personal coding projects
- Experience in graphics programming and `OpenGL+GLSL`
- Skilled in building user-oriented applications with `C/C++`
- Heavy user of `LaTeX` to write reports and format data
- Able to create `sh/bash/zsh` scripts on-the-fly to expedite tasks

Projects

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

Using `GLSL`, and the `OpenGL` 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 Gaussian/Kawase Blur shaders with variable kernel parameters. Created a custom build system in order to dynamically manage and integrate program assets into code.

`nodumi` – Interactive Music Visualizer · C++/GLSL (⌗ – iikare/nodumi) ·············· 6/20 – present

Built a cross-platform application to visualize live and prerecorded MIDI input. Designed a custom Voronoi cell shader for visualizing music patterns in real-time. Developed a *k-means clustering* algorithm to extract palette colors from background images. Dynamic, synchronized rendering of sheet music from user input.

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 marketing 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.