

Rahul Dharmaji

Undergraduate Student – Computer Engineering
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Education

University of California, Santa Barbara


B.S. Computer Engineering · GPA: 3.89 9/19 – 6/23 (expected)
Data Structures & Algorithms, Automata & Formal Languages, Real-Time Embedded Systems,
Operating Systems, Computer Architecture, Computer Vision, Digital Signal Processing, Digital
System Design, 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
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Projects

meikyu – 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](https://github.com/iikare/nodumi)) 6/20 – present
Built a cross-platform application to visualize live and prerecorded musical input. Designed a custom
Voronoi cell shader for visualizing music patterns in real-time. Developed a *k-means* clustering
algorithm with a novel initialization method to extract palette colors from background images.
Implemented a real-time simulation of a FFT on discrete musical instrument input data. 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 stu-
dents 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 6/21 – 9/21 · 6/22 – 9/22
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, frame-
rates, resolutions, etc.) to determine optimal rendering configurations for mobile phones, tablets,
and laptops. Logged bugs with developers and pushed builds onto QA servers.