Rahul Dharmaji

Graduate Student – Computer Engineering
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Education

University of California, Irvine
M.S. Electrical & Computer Engineering ····· 9/23 – 6/24 (expected)
Analysis of Algorithms, Computer Architecture, Deep Learning Accelerators, Operating Systems.

University of California, Santa Barbara
B.S. Computer Engineering ····· 9/19 – 6/23

Experience

Embedded & Cyber-Physical Systems Lab | Irvine, CA
Researcher ····· 6/23 – present
Research Interests: AI/ML, LLMs, NLP, Computer Security.

Vyu Labs, Inc. | Cupertino, CA
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, framerates, resolutions, etc.) to determine optimal rendering configurations for mobile phones, tablets, and laptops. Logged bugs with developers and pushed builds onto QA servers.

Valkyrie Robotics | Santa Clara, CA
STEM Mentor, Director of Media ····· 3/18 – 8/23
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.

Publications

- *Mohamad Fakih, Rahul Dharmaji, Yasamin Moghaddas, Gustavo Quiros Araya, Oluwatosin Ogundare, and Mohammad Abdullah Al Faruque. 2023. LLM4PLC: Harnessing Large Language Models for Verifiable Programming of PLCs in Industrial Control Systems.* (in review)

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. Created a custom build system in order to dynamically 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 musical input. Designed a custom Voronoi cell shader for visualizing music patterns in real-time. Implemented a real-time simulation of a FFT on discrete musical instrument input data.