Rahul Dharmaji

Graduate Student – Computer Engineering
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Education

University of California, Irvine

M.S. Electrical & Computer Engineering · (4.00) ····· 9/23 – 6/24 (expected)

Algorithms, Computer Architecture, Operating Systems, Convex Optimization, Deep Learning Compilers, Deep Learning Accelerators.

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, Computer Security, Automated Code Generation.

Vyu Labs, Inc. | Cupertino, CA

Software Engineering Intern ····· 6/21 – 9/21 · 6/22 – 9/22

Installed, tested, and certified development builds for mobile platforms. Ran debugging tools with breakpoints to rectify failing unit tests. Identified bugs and pushed builds onto QA servers.

Valkyrie Robotics | Santa Clara, CA

STEM Mentor, Director of Media ····· 3/18 – 8/23

Provided mentorship to K-12 students towards building functional, adaptable robots. Worked with the organization's recruitment committee to help expand membership. Aided in graphic design 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. 2024. LLM4PLC: Harnessing Large Language Models for Verifiable Programming of PLCs in Industrial Control Systems ····· (ICSE'24 ·)
- Mohamad Fakih, Rahul Dharmaji, and Mohammad Abdullah Al Faruque. 2024. [title withheld while in double-blind review] ····· (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.