

Akhilan N. Ganesh

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Summary

Hi! I am a skilled software engineer with a passion for back-end application development and cloud development. I have demonstrated expertise in implementing diverse software solutions and always looking to explore and expand my knowledge base. Furthermore, I am proficient in a wide array of back-end and low-level programming languages, tools and technologies, with a proven ability to collaborate in teams and deliver high-quality industry-standard projects.

Education

B.S. Computer Science, *University of California - San Diego*, 3.89 GPA

June 2023

Project Experience

Snek Compiler (Rust)

[March 2023 - June 2023]

- Architected a compiler for the dynamically-typed CSE 131 Snek language
- Implemented functions, safe-for-space tail calls, heap allocation and LISP-2 mark-compact garbage collection

Yodie ISA and Microprocessor (SystemVerilog, Assembly)

[January 2023 - March 2023]

- Led a team to design a custom ISA and microprocessor to handle error detection/correction and pattern match
- Created a microprocessor in SystemVerilog, and an assembler in Python
- Optimized on both the instruction set and number of assembly instructions for all functionalities/programs

Raytracer (C++)

[January 2022 - March 2022]

- Engineered a custom algorithm with traditional ray casting, preliminary shading, and recursive ray tracing
- Introduced an acceleration structure that improved performance logarithmically against triangles in a scene

Bujo: Web-based Bullet Journal (JS)

[April 2021 - June 2021]

- Collaborated in a team to build a bullet journal web application using industry agile development processes
- Deployed a Progressive-Web-App experience by using IndexedDB and JS Web Workers

Open Journey: 2D Game (Java)

[November 2019 - December 2019]

- Designed a complete 2D adventure game using Swing API and Java GUI features
 - Implemented object-oriented game entities and an event-driven game loop
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Skills

Programming Languages:

Java, C, C++, C#, C-CUDA, Golang,
Python, Rust, SQL, SystemVerilog,
Assembly, HTML, CSS, JavaScript

Tools and Technologies:

Git/Github, Node.js, Express.js, React,
Pytorch, SQLite, MySQL, MongoDB
Quartus, Questa/ModelSim, Linux

Undergraduate Courses of Interest

- Software Engineering (CSE 110)
- Principles of Computer Operating Systems (CSE 120)
- Computer Graphics (CSE 167)
- Computer Security (CSE 127)
- Deep Learning (CSE 151B)
- Machine Learning (CSE 151A)
- Database System Implementation (CSE 132C)
- Computer and Communication Networks (CSE 222A)
- Compiler Construction (CSE 131)

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Github: <https://github.com/akhilanganesh>