

Akhilan N. Ganesh

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Summary

I am a skilled software engineer with an interest in back-end applications and cloud development. I have expertise in implementing diverse software solutions and actively seeking to expand my knowledge base. With my proficiency in a wide array of languages, tools, and technologies, I'm looking to collaborate and deliver high quality in my next venture.

Education

Bachelor of Science degree, Computer Science, **University of California-San Diego**, 3.89 GPA in *June 2023*

Project Experience

Snek Compiler (Rust) Mar 2023—Jun 2023

- Architected a compiler for the dynamically typed CSE 131 Snek language
- Built compilation logic for functions, safe tail calls, heap allocation, and mark-compact garbage collection

Yodie ISA and Microprocessor (SystemVerilog, Python) Jan 2023—Mar 2023

- Led a team to design an ISA/microprocessor to handle error detection/correction & pattern match
- Optimized instruction set (to 9-bit instructions) & number of assembly instructions (cut by 50%)

Raytracer (C++) Jan 2022—Mar 2022

- Engineered a custom algorithm with ray casting, preliminary shading & recursive ray tracing
- Introduced a bounding box acceleration structure that improved performance logarithmically

Bujo: Web-based Bullet Journal (JS) Apr 2021—Jun 2021

- Collaborated in an 8-person team to build a bullet journal web app using industry Agile practices like Scrum
 - Deployed a Progressive-Web-App experience by using IndexedDB and JS Web Workers
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Skills

Programming Languages:

Java, C, C++, C#, C-CUDA, Golang,
Python, Rust, SQL, SystemVerilog,
ARMv8, x86, HTML, CSS, JavaScript

Tools and Technologies:

Git/GitHub, Docker, SQLite, MySQL, PostgreSQL,
MongoDB, Node.js, Express.js, React, Next.js,
TailwindCSS, PyTorch, Quartus, Questa Sim, Linux

Undergraduate Courses of Interest

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

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