Satvik Reddy

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I am a software developer and High-schooler from the San Francisco Bay Area who has been programming for the last seven years.

Education

Aragon High school

2020 – current

Skills

- Programming Languages: Python, Rust, Go, Typescript, Javascript, Java, C, C++, Assembly, SQL
- Databases: PostgreSQL, MongoDB, SQLite
- Cloud/DevOps: AWS EC2, S3, RDS, Lightsail, Google Firebase, Docker, Git, Github
- Frameworks/Libraries: Flask, Express.js, React, Next.js, OpenGL
- Other technologies: REST APIs, Websockets, Nginx, Linux/Unix, RabbitMQ

Experience

FRC Robotics Team | Programmer, Software Lead, Captain

August 2020– Current

After spending two years on the team as a Programmer and then Software Lead, I, alongside my co-captain, led our 35+ member team for two semesters. During the fall semester, we managed a training program, teaching CAD, programming, and fabrication to new members. We also competed in an off-season competition, in which we reached Semifinals. During the spring semester, I led our team in building a new robot in the span of 7 weeks.

Lightbeam.ai | Intern

June 2022 - July 2022

I wrote software in Python to automatically scrape thousands of images, as well as SEC documents, from online sources to be used in training and testing Machine Learning models.

pSolv | Intern

June 2021 - July 2021

I worked with open-source Apache Syncope software, as well as protocols such as **LDAP** and **Active Directory** to integrate third-party identity stores into their backend. I wrote bindings for both a **CLI** and a **REST API** written in **Python** so users could manage third-party users.

Projects

RC

Rust, x86-64 Assembly, Linux

RC is a **compiler** for a programming language very similar to C. Features of the language include static typing, variables, functions, arrays, multi-dimensional arrays, loops, conditionals, and strings. I also wrote a barebones standard library that provides access to various **Linux** syscalls. The compiler itself is written in Rust and compiles code down to **x86-64 assembly**, before being assembled and linked. Github link: https://github.com/SatvikR/rc

LCGE

C, OpenGL, 2D Graphics

LCGE is an open-source, lightweight 2D game engine written in **C**. I used the **OpenGL** graphics API to render 2D graphics. LCGE can create a window, maintain an FPS, render 2D rectangles, render 2D images, render 2D lines, get keyboard input, get mouse input, load fonts, and render text. LCGE is distributed as a shared library and is compatible with windows, macOS, and Linux. GitHub link: https://github.com/SatvikR/LCGE

Liveassist

Microservices, Go, Next.js, React, Typescript, WebSockets, RabbitMQ, PostreSQL, MongoDB

Liveassist is a knowledge-sharing platform that allows people to ask and answer questions over an easy-to-use live-messaging interface. The backend was written using a **microservice architecture**, with each service being deployed in a separate **docker** container. Each service has its own REST API written in **Go**, and the services each communicate with each other using **RabbitMQ**. I built the live-messaging interface by writing a multithreaded **WebSocket** server in Go to handle receiving/broadcasting messages to active users. Messages are stored in a **MongoDB** database, while all user data is stored using **PostgreSQL**. I deployed the microservices and the databases to **AWS EC2** using docker and **Nginx** to handle networking, and I deployed Next.js frontend site to Vercel. GitHub Link: https://github.com/SatvikR/liveassist

Homework Help

Node.js, Next.js, React, Typescript, REST, MongoDB, AWS S3

This project is a platform made for students to get help with homework and assignments. Students can share questions, answer questions, and give feedback. The backend is a REST API built with **Node.js**, **Express.js**, and **Typescript**. I used **MongoDB** to store data, and Redis to store **JWT tokens**. The frontend was built with **React** and **Next.js**. The server and the database were hosted on an **AWS EC2** instance, the Next.js website was hosted on Vercel, and user-uploaded images were stored on **AWS S3**. GitHub Link: https://github.com/SatvikR/homework-help

More projects listed on my GitHub account