Akshath Rao

425-961-3798 akshathraop@gmail.com Github Linkedin Portfolio

PROFILE

University of Washington Computer Engineering Student with fluency in programming, business management skills and seeking opportunities in algorithm development, mathematical modelling and data analytics

EMPLOYMENT HISTORY

June 2025 - Present

Software Engineering Intern, Deloitte.

- Development in full-stack agentic AI application for client using **React, Flask, Tailwind CS**S, and **LangChain**, enabling seamless user interaction with a chatbot interface.
- Contributed to web scraping and data collection using **Selenium**, containerized services with **Docker**, and triggering CI/CD pipelines via GitHub Actions to support continuous deployment
- Processed & **embedded over 25,000 documents** into a vector store, indexed for **semantic search**

June 2024 - Sept 2024

Software Design Engineering Intern, Magna International

- Developed a live visualization port for fused sensor data using **OpenGL engines** (Rviz & Unity), supporting **C++ development**. Delivered a real-time visualizer for future simulations.
- Used open simulation interfaces with Radar and Lidar systems **via CAN-Bus for ECU**-computer sensor data visualization (**Vulkan** for cross-compatibility across **QNX, Linux, and Unix)**

Mar 2023 - Nov 2023

Research Assistant, University of Washington Ocean Data Lab

- Worked with Professor Abadi in the ECE Department with a specialization in Ocean Acoustics
- Used Data Processing frameworks to **process over 2500 hours of audio data** and translated into **spectral density flows** that pinpointed different shipping sounds in the Puget Sound Area.
- Developed signal processing algorithms in Python to analyze acoustic data using **TensorFlow**, **SciPy** and **Matplotlib**, **reducing Manual-data entry by over 25%**

Jun 2023 - August 2023

Undergraduate Research Student, NASA

- Collaborated with Professor Kristi Morgansen in the Aeronautics department on the Lunar Rover team, designing and fabricating a sample collection subsystem.
- Developed a **load-based electromagnetic actuation script in C++ for Arduino** based Solenoids

Feb 2020 - November 2022

Co-Founder, Codeahead

- Form non-profit organization Codeahead to teach **Java and Python** to students ages (8-12)
- Raised **$2000** dollars for charity organization (Charity Organization Assistance League of the Eastside)
  - Helped children affected by homelessness and domestic abuse

PROJECTS

June 2024 - Present

Alpaca Sentiment Based Trading Bot using Hugging Face Learning Model

- Implements Lumibot library with Alpaca interface to run real-time, real-world trades
- Back tested over a period of 5 years using data from Yahoo Finance's news pages and data

Dec 2024 - Present

Developing Pipelined CPU with hazard handling

- Designed and implemented a pipelined **ARM-style CPU** in SystemVerilog with **hazard** detection, **data forwarding**, and multi-stage execution

June 2024 - Sep 2024

Collective Perception: Visualizing Surroundings via Cloud-Based Sensor Data

- Developed visualization port for fused sensor data using **OpenGL engines Rviz** simulated systems with **Docker** from **CAN-Bus Data** from ECU, creating a digital replication of surroundings from sensor data

Mar 2023 - Nov 2023

Spectral Density Analysis of Hydrophone Data

- Application of Fourier Transforms and **Euclidean Spaces** on hydrophone data in Python using **Matplotlib**, **pandas**, & **NumPy** (allows to characterize the ocean ambient noise captured in data)

EDUCATION

Expected Graduation March 2026

BS Computer Engineering, University of Washington — Seattle

- Relevant Coursework: **CSE 442** Data Visualization, **CSE 344** Databases, **EE 342** Advanced Signal Processing and Machine Learning, **CSE 369,371** Digital Design, **EE 419** Computer Networks, **CSE 474** Embedded Systems, **CSE 469** Computer Architecture
- Clubs: **Applied Analytics Member** (September 2023 - Present)

Sep 2018 — Jun 2022

High School Diploma (IB Diploma), Skyline High School — Sammamish

- National Honors Society and 3 year Member at First Robotics team 2976/ Spartabots
- International Baccalaureate Student courses: Computer Science SL/HL, Math SL, Chemistry

SKILLS

Programming Languages: Python, Java, C#, C++, JavaScript, Bash, Verilog, SQL, TypeScript, HTML, Go

Software Tools: Docker, React, Git, AWS S3 & EC2, Azure, SoC Quartus, Pytorch, Node.js

Other Relevant Skills: Containerization and Application testing on Docker, Full stack dev work, deployment and validation testing, Open GL and Vulkan API, G-code for CNC application

EXTRA-CURRICULAR ACTIVITIES

Aug 2019 — June 2022

Robotics Team 2976 FRC Build Lead

- Participated in Houston world championship in 2018-2019, **placing 3rd in the Hopper Division**
- Prototyped and designed complex robot function subsystems (drive-train with **low-latency MIPI_CSI imaging camera**) connected to autonomous and remote control features

Nov 2019 — Jul 2021

Distributive Education Clubs of America (DECA)Issaquah