

Akshath Rao

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[Github](#)

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[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 CSS**, 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