

Akshay Aravind

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EDUCATION

Cornell University, College of Engineering

Bachelor of Science in Computer Science | **GPA:** 3.98/4.00

Relevant Courses: Object-Oriented Programming & Data Structures, Functional Programming, Discrete Math, Statistics, Calc III

Ithaca, NY

May 2025

Burlington High School: GPA: 4.46/4.00 ~ Class Rank: Top 5% ~ High Honors List ~ June 2022

Burlington, MA

TECHNICAL SKILLS

- **Languages:** Python, Java, OCaml, JavaScript, TypeScript, HTML/CSS, C++, SQL
- **Technologies:** React, ChatGPT, Prompt Engineering, LangChain, Angular, Java Swing, FastAPI
- **Developer Tools:** Git, MySQL, MongoDB, VS Code, IntelliJ, Docker

EXPERIENCE

Abris

Software Engineer Intern

Tech Stack: React, Angular, FastAPI, LangChain, Python, OpenAI API, Pinecone, Git

- Spearheaded the development of **3+** different projects at Abris, a **tech startup** focusing on novel applications of AI technology
- Implemented data retrieval based on **chatbot queries**, interpreting user prompts to fetch data from **Pinecone** vector databases
- Leveraged **Angular** and **FastAPI** to build fullstack apps with AI functionality incorporated through **LangChain** and **ChatGPT**

Andover, MA

June 2023 - Present

Campbell Lab

Computational Biomedicine Research Intern

Tech Stack: R, Python, Shiny, Git

- Actively develops computational biomedicine software as a paid intern for **Dr. Joshua D. Campbell's** lab at Boston University
- Implements and improves data analysis functions in R packages that handle large genomic datasets of over **500k** data points
- Collaborates closely with **bioinformatic graduate students**, bolstering research efforts through software in **R** and **Python**

Boston University

May 2023 - Present

Cornell Mars Rover

Software Team Member

Tech Stack: C++, Python, OpenCV, Docker, Git

- Selected for the **software subteam**, tasked with developing Cornell's autonomous rover for the **University Rover Challenge**
- Regularly presents novel software ideas to **70+ peers** in team meetings, focusing on specific goals that are broken into subtasks
- Implements and debugs innovative rover functionality through **C++**, leveraging **Python** scripts to develop comprehensive tests

Cornell University

Oct 2022 - Present

PROJECTS

FitnessAI ~ fitness-ai.netlify.app/

Tech Stack: React, Python, LangChain, FastAPI, OpenAI API

- Created a functional **AI app** from scratch, comprised of a **fitness chatbot** and a **customized workout generator** for the user
- Leveraged **ChatGPT 3.5** through **OpenAI's API** and **LangChain** so fitness goers can receive personalized workout advice
- Utilized **React** to fully develop the frontend, with RESTful API for communication to the backend built with **FastAPI**

Personal Project

June 2023 - Present

SingleCellTK Package ~ github.com/akshayarav/singleCellTK

Tech Stack: R, Shiny, Python, Git

- Contributed to the open source singleCellTK R package produced by the Campbell Lab for analysis of single cell RNA-seq data
- Implemented a **bubble plot visualization tool** that aggregates and plots large RNA-seq data using the **ggplot2** R package
- Expanded upon the interactive UI using Shiny, abstracting the bubble plot for simplified usability through **GUI development**

Campbell Lab

June 2023 - Present

Autonomous ArUco Tag Detection

Tech Stack: C++, Python, OpenCV, Docker

- Implemented computer vision software for ArUco tag detection in the autonomous portion of rover competition using **OpenCV**
- Utilized a camera-specific **3x3 distortion matrix** input, allowing for the support of any camera in anticipation of rover changes
- Precise pose estimation enables autonomous navigation with **95% accuracy**, accurately identifying markers from **30+** feet away

Cornell Mars Rover

Mar 2023 - Apr 202

IMC Trading Prosperity Challenge

Tech Stack: Python, Jupyter Notebook, Matplotlib, pandas, Git

- Placed in the **top 10%** of competitors through collaboration with a team of **4**, coding over a 10 day sprint of **5 rounds each**
- Developed and deployed a variety of trading algorithms in Python to **optimize** profit generation in a simulated stock market
- Analyzed simulated market data in large CSV files of **100k+ lines** with pandas, and effectively visualized data using Matplotlib

Coding Competition

Mar 2023

Interests: Lifting, Boston Celtics, Competitive Video Games, Travelling, Piano, Rap and Hip Hop