Akshay Aravind

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EDUCATION

Cornell University, College of Engineering — **Ithaca, NY**
Bachelor of Science in Computer Science | ***GPA*:** 3.98/4.00 — *Expected May 2025*
Relevant Courses: Object-Oriented Programming & Data Structures, Functional Programming, Discrete Math, Statistics, Calc III

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 — **Andover, MA**
Software Engineer Intern — *June 2023 - Present*
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**

Campbell Lab — **Boston University**
Computational Biomedicine Research Intern — *May 2023 - Present*
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**

Cornell Mars Rover — **Cornell University**
Software Team Member — *Oct 2022 - Present*
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

PROJECTS

FitnessAI ~ *fitness-ai.netlify.app/* — **Personal Project**
Tech Stack: React, Python, LangChain, FastAPI, OpenAI API — *June 2023 - July 2023*
- 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**

SingleCellTK Package ~ *github.com/akshayarav/singleCellTK* — **Campbell Lab**
Tech Stack: R, Shiny, Python, Git — *June 2023 - Present*
- 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**

Autonomous ArUco Tag Detection — **Cornell Mars Rover**
Tech Stack: C++, Python, OpenCV, Docker — *Mar 2023 - Apr 2023*
- 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

IMC Trading Prosperity Challenge — **Coding Competition**
Tech Stack: Python, Jupyter Notebook, Matplotlib, pandas, Git — *Mar 2023*
- 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

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