Anand Vinod

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Education

University of Maryland, College Park **May 2026**

B.S. in Computer Science (Machine Learning), B.S. in Mathematics *College Park, MD*

GPA: 4.0

Relevant Coursework

- Org. of Prog. Langs
- Algorithms
- Discrete Structures
- Intro to Data Science
- Linear Algebra
- Calculus I, II, III
- Differential Equations
- Computer Vision

Experience

George Mason University **September 2021 – November 2021**

Remote Intern *Fairfax, VA*

- Created a **Python** interface to identify and examine altermagnetic properties of 230 crystallographic space groups.
- Utilized **BeautifulSoup** to scrape relevant data, which was processed via **Pandas**.
- Discrete transformations and algorithms were applied to determine whether space groups contained altermagnetic properties or not.

Projects

Bitcamp: Hackathon | *Python* | github.com/daven-c/Course **April 2024**

- Developed a website that allows students at UMD to easily find others who take similar courses using their Canvas login.
- Integrated **React** for a dynamically rendered, interactive front-end and **Flask** to seamlessly manage back-end data integration, creating a smooth user experience for the website.
- Leveraged **SQLAlchemy** to manage user data in a database, and utilized **Selenium** and **BeautifulSoup** for web scraping to extract course information for **700+** courses from the Canvas website.
- Won **1st** Place in the People's Choice Hack.

HooHacks: Hackathon | *Python* | github.com/erthy8/DanceMaker **March 2024**

- Created an application to overlay 5+ minute dances from YouTube Videos using Google's **MediaPipe**.
- Employed **Pandas** to handle the overlay of points onto a display across **>230 timestamps**, integrating **OpenCV** for visual processing.
- Won **3rd** place in the Games & Arts Category.

BandMaker | *Python, yfinance* | github.com/daven-c/BandMaker **November 2023 - January 2024**

- Implemented a discord bot that tracks stock patterns for over **100** desired tickers at once using **Yahoo Finance's** Python API, indicating bullish/bearish candlestick patterns.
- Utilized the **plotly** library to create a interactive graph interface for users to examine bot-generated analytics and stock trends upto a span of **5 years.**

HackTJ: Hackathon | *Python, PyCharm* | github.com/daven-c/HackTJ-10.0-Hackathon **March 2023**

- Developed an application allowing users to control a cursor using their hand and a relative area. Implemented **7** different features including mouse buttons/scrolling.
- Implemented the project with **OpenCV** and **MediaPipe** in order to track the user's hand properly, and fingers for mouse buttons. Leveraged **NumPy** to perform linear transformations for cursor translation calculations based on the relative hand movement.
- Won **1st** Place in the CyberTech category of the Hackathon.

First Tech Challenge: Robotics | *Java, Android Studio* **June 2019 - August 2023**

- Programmed motors, sensors, and servos of robots for 4 years, each with specialized, precise functions. Programming and device communication was done via **Android Studio**.
- Integrated **OpenCV** with an installed camera to detect **20+** objects simultaneously and plan optimal paths.
- Leveraged path-planning algorithms in conjunction with complex chassis in order to manage the kinematics and routing of the robot along the field (**Pure Pursuit**).
- Received invitations to **3 state-level** and **1 world-level** competition.

Technical Skills

Languages: Python, Java, C, OCaml, F#, Rust, LaTeX
Developer Tools: VSCode, IntelliJ, Eclipse, Android Studio, PyCharm, GitHub, Unix
Libraries: NumPy, Pandas, OpenCV, TensorFlow, Keras