Hrithik Bansal

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EDUCATION

University of Maryland College Park, MD
B.S., Computer Science *(Machine Learning Specialization)* *Expected May 2022*
GPA: 3.84; *Dean's List:* 2018, 2019, 2020
Honor's Programs: Computer Science Honors, QUEST Honors Program
Relevant Coursework: Computer Vision, Computer Network and Security, Data Science, Algorithms, Entrepreneurship

EXPERIENCE

University of Maryland College Park, MD
Teaching Assistant - CMSC414 *Jan 2021 – Present*
- Responsibilities include **designing projects**, **grading assignments** (quizzes, exams), and holding regular office hours.
- The course is part of the cybersecurity specialization and spans Exploits, Web Attacks, Cryptography and Networking.

University of Maryland – Sandbox Makerspace College Park, MD
Student Web Developer *Sep 2019 – Present*
Lab Manager *Sep 2018 – Sep 2019*
- Centralize resource management by coding a **Web App** (**React**) for Equipment Tracking, and Space/Tool Reservation.
- Initiate development of **sandbox-API (Flask)**, which would allow students to 'make' from their home by checking tools.
- Striving to improve the space through **applied data science**, by gathering data from users and tracking tool activity.
- **Boost student engagement** and learning by designing online courses to teach proper use of tools and equipment.
- **Increase accessibility** for students be more hands-on and work on real projects by helping them execute their ideas.

Trak N Tell Delhi (NCR), India
IoT Developer Intern *Jul 2020 – Oct 2020*
- Upgraded vehicle security to use **face recognition authentication** by writing software to detect faces using **OpenCV**.
- Achieved complete on-board computation of facial data by implementing the software on a **Raspberry Pi** with a **Pi Cam.**
- **Optimized** the software to make face-recognition **faster** onboard the Raspberry Pi by using **skip-frame** processing.
- **Tested** the system to incorporate features like driver drowsiness detection and car-selfie for future proprietary uses.

RESEARCH

Human Computer Interaction Lab College Park, MD
Independent Research Sep *2019 – May 2020*
- Formulated the idea for **a virtual physical collaboration** tool to convert digital text into physical text on a whiteboard.
- **Fabricated a chassis** for the system by using motors from a 3D printer for initial testing and calculating kinematics.

Note. Unfortunately, due to COVID, the research was cut short during the semester, leaving the project at a standstill.

PROJECTS

Sandbox App + API
Sandbox Makerspace
- Design and code a front-end app using **React**, which would serve as an information kiosk for students in the space.
- Implement a **REST API** using **Flask + Python**, to interact with the front-end application and serve dynamic content.
- Upgraded the space to use the app by engineering custom hardware with **Raspberry Pi** and a touch screen to run it.
- Forecasted **saving time of students**, by allowing them to reserve tool/equipment in advanced by using the app.

All Time Protection
Independent Venture
- **Capitalized** on market demand for masks and **boosted sustainability**, by founding a mask company in the pandemic.
- Decrease the impact of single use masks on the environment by producing sustainable, reusable cotton masks.
- **Engaged independent** tailors in urban-villages to outsource manufacturing and empower cottage-entrepreneurship.
- Oversaw production and fulfillment of over **3500+ orders** and dealt with clients and vendors singlehandedly.

Spotify Clone
Independent Project
- Coded a fully mobile responsive clone of Spotify using **React**, **Context API**, **Hooks**, Material UI and the **Spotify API**.

TECHNICAL SKILLS

Languages: Python, JavaScript, JSX, C, Ruby, C++, Java, HTML, CSS, SQL, Bash, ZSh, Git
Frameworks: Docker, Jupyter Notebook, Pandas, React, OpenCV, Flask, Rails, Linux
Technologies: PWAs, REST APIs, Containers, IoT, Embedded Automation