

HRITHIK BANSAL

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EDUCATION

University of Maryland

B.S., Computer Science (*Machine Learning Specialization*)

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, Data Structures, Algorithms, Functional Programming, Entrepreneurship, Design and Quality, Design Thinking

College Park, MD
Expected May 2022

EXPERIENCE

University of Maryland

Teaching Assistant - CMSC414

College Park, MD
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

Student Web Developer

Lab Manager

College Park, MD

Sep 2019 – Present

Sep 2018 – Sep 2019

- Centralized resource management by coding a web app(React) for Equipment Tracking, and Space/Tool Reservation.
- Initiated 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.
- Boosted 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.
- Remodeled the space to be more inclusive and simplify tool accessibility by designing the 'Tool Wall', a tool display.

Trak N Tell

IoT Developer Intern

Delhi (NCR), India

Jul 2020 – Oct 2020

develop an embedded system, hosted on a raspberry pi, to make authorized use of automobiles easy and more secure using Facial Recognition.

- Enhanced 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 RaspberryPi with PiCam.
- Optimized the software to make onboard face-recognition faster on the RaspberryPi by using skip-frame processing.
- Analyze integration of the software onto an Android infotainment system to create a low cost, plug-n-play alternative.
- Tested the system to incorporate features like driver drowsiness detection and car-selfie for future proprietary uses.

RESEARCH

Human Computer Interaction Lab

Independent Research

College Park, MD

Sep 2019 – May 2020

- Formulated the idea for a long-distance 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.
- Explored a possible approach to make the system portable, and scalable by using lasers to align the drive motors.

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

PROJECTS

Spotify Clone

Independent Project

Live | GitHub

Jul 2020

- Built a fully mobile responsive clone of the Spotify web app using React and the Spotify API.
- Implemented full user-authentication through the API, and enabled dynamic content fetching, and rendering.
- Utilized Material UI to mimic the User Experience of the original app and hosted the same on GitHub pages.

Helping Hand

Independent Project

Live | GitHub

May 2018

- Developed a Bluetooth enabled robotic arm that can physically mimic the human arm using geared actuation.
- Created an Android app to control the robot, which included translation on ground, and 'arm' manipulation.

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