

# Anmeet Sekhon

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## PROJECTS

### Real-Time Data Logger | C++, FreeRTOS, Arduino

- Developed a real-time data logger using an **ESP32 microcontroller** and **FreeRTOS** for multitasking
- Implemented tasks for sensor data acquisition, data logging to SD card, and data transmission over Serial
- Ensured real-time performance and data integrity using RTOS features such as task scheduling and mutexes

### 🔗 Ball Balancing Robot | C++, Arduino, Solidworks

- Designed a custom **3-RRS parallel manipulator** actuated by stepper motors and controlled with an Arduino
- Implemented a **PID** control algorithm using data from a 4-wire resistive touch pad for ball balancing
- Calculated **inverse kinematics** to coordinate platform tilt with target motor angles 🔗
- Wrote Python scripts to log data over serial for testing and refinement of components

### 🔗 Portfolio Website | Typescript, Tailwind, Next.js, Three.js, React.js

- Developed a widget displaying my currently playing track using 🔗 **Spotify's Web API**, tested using **Postman**
- 🔗 Created a hand tracking demo powered by **Mediapipe** and **Three JS** for interactivity
- Implemented custom reusable **UX** components to enhance maintainability.

### 🔗 Hand-tracked Cursor Control | OpenCV, Mediapipe, Python, Pytorch

- Developed a python script using the **OpenCV** library for live video feed and image filtering
- Uses **Mediapipe** for hand landmark detection, translating gestures into cursor movements

## EXPERIENCE

### Microsoft - Finance Project: Financial Investment Coach

Remote

*WE Accelerate Program @ UW*

01/2024 - 04/2024

- Prototyped a trading platform that utilizes AI to coach users through investments in the market
- Created and maintained Azure resource groups, compute services, containers and databases for project solution
- Completed AZ-900 and AI-900 certifications, exploring Azure cloud computing services for AI applications

### Inqsys Technologies Inc

Toronto, ON

*Web Developer Intern*

04/2023 - 09/2023

- Worked with **React.js** in the MERN stack to design the login page for a social media site
- Implemented responsive design for both desktop and mobile environments
- Collaborated with QA team to fix bugs in react hook components

### WebPulse Canada

Remote

*Web Developer Volunteer*

01/2022 - 09/2022

- Revamped front-end design of 5 websites using **PHP, HTML/CSS & Javascript**
- Integrated **MySQL** into contact forms for backend databases

## EXTRA CURRICULARS

### FIRST Robotics Team 1325

Mississauga, ON

*Design Team Lead* | 🔗 *Triple Axis Arm*

10/2022 - 04/2023

- Led the design of a 3-DOF arm, securing an overall ranking of 2nd in Canada (out of 183), 15th worldwide (out of 3284)
- Designed gearboxes and aircraft cable pulley systems, selecting materials based off stress limits and other calculations

## CERTIFICATIONS 🔗

### MathWorks

*CV Onramp* | *Machine Learning* | *OOP Onramp* | *Deep Learning* | *Reinforcement Learning*

### Microsoft

*AZ-900 (Azure Fundamentals)* | *AI-900 (AI Fundamentals)*

## TECHNICAL SKILLS

**Languages:** C++/C, Java, Python, Typescript, JavaScript, HTML5/CSS3, SQL, LaTeX, MATLAB, C#

**Frameworks:** OpenCV, ReactJS, NextJS, ThreeJS, TailwindCSS, NodeJs, ROS, ROS2

**Tools:** Github, Solidworks, Pytorch, TensorFlow, Linux, Postman, Microsoft Azure, LabVIEW