AADI CHAUHAN

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Education

University of Calgary — Calgary, Alberta

B.Sc. in Software Engineering — *Sep 2022 – May 2027*

Minor Degree in Biomedical Engineering — *Sep 2024 – May 2027*

Relevant coursework: Data Structure & Algorithms, Networked Systems, Embedded Software and Hardware Systems, Applied Operating Systems, Discrete Mathematics, Object Oriented Programming, Full Stack Web Development, Fundamentals of Electrical Circuits and Machines

Looking for a 12-16 month internship as part of an internship term.

Skills

Languages: C/C++, C#, Python, RISC-V ASL, Java, JavaScript, SQL, HTML, CSS, Matlab

Technologies: Git, Microcontrollers, Single Board Computers, React.js, MySQL, AWS Cloud Services, OpenCV, TensorFlow, Postman, Bash, Flask, React, QT

Involvement

Vice President of Software Engineering

Augmented Reality for Medicine — *Sep 2023 – Present*

- Lead a team of software engineers in developing augmented reality applications. This includes overseeing project planning, design, and implementation phases to ensure successful completion.
- Manage version control and code review processes to maintain high-quality code standards.
- Write and read detailed and clear documentation to ensure all projects are reproducible.

Controls Team Software Member

Schulich Space Rover Team — *Sep 2024 – Jan 2025*

- Developed an inverse kinematics math library in C++, enabling precise control and positioning of a multi-degree-of-freedom robotic arm for complex tasks.
- Programmed firmware to interface with controllers, motors, and sensors, ensuring seamless communication and efficient operation of the robotic arm.
- Optimized communication protocols between the robotic arm and the control system, reducing latency and improving responsiveness.

Projects

Hand Gesture Recognition System for Augmented Reality

- Leveraged OpenCV, Mediapipe, and Tensorflow to create a hand-tracking model capable of recognizing gestures such as zoom, point, pinch, and more.
- Used transmission control protocol to send values to a separate Unity program utilized for rendering and visualization.
- Collected and trained data using a batched gradient descent training method for the project to recognize specific custom gestures created directly for augmented reality.

Real Time Weather Display Using a Microcontroller and Python Server

- Created a Python script for getting information about the weather in any location and encoding that information into unsigned binary.
- Used ANT communication protocol to wirelessly send signed/unsigned bytes using the Ctypes library to an ARM-based custom-made custom development board with an ATMEL microcontroller.
- Used C to program the microcontroller to decode the binary information and display the weather conditions on an LCD screen.

Certifications

2024 EiE Firmware 1 Certificate of Completion (Embedded in Embedded): Certified in using the ARM Cortex-M microcontroller designed and engineered by the Embedded in Embedded organization at the University of Calgary. (2024)