Dev Patel

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Education

McMaster University **Sep. 2022 – May 2026**
B.Eng Computer Engineering Co-op *Hamilton, Canada*
Culminative GPA: 3.88/4.00, Dean's Honours List Recipient

Technical Skills

Programming Languages/Frameworks: Python, Javascript, HTML/CSS, C/C++, Flask, SQL, Visual Studio Code, React.js, Jupyter Notebook, Verilog
Application Software: OrCAD X, MATLAB, Quanser Labs, Autodesk Inventor/AutoCAD, Onshape, EasyEDA
Embedded Systems: Arduino's, AD2(Analog Discovery Kit)

Projects

ComfortClick Remote | *Arduino, C++, Autodesk Inventor*

- Developed a personalized remote for individuals with Multiple Sclerosis, that has many functions to provide a more convenient TV viewing experience
- Used the ADCtouch, IRLibAll, and the CapacitiveSensor Arduino libraries to decode, and send out accurate binary data to the TV
- Designed custom capacitive buttons by reading the capacitance of the buttons and if there was a significant alteration (pressing it) to send IR signals that are programmed to the button
- Created a custom button feature on the remote which would, when activated, start reading IR signals passed into the remote and store them into an array until the button was pressed again, indicating to stop reading signals. Once the custom programmed button was pressed it would automatically send every saved IR signal to the TV.
- With the use of Autodesk inventor an ergonomic casing was built in which an anti-slip material was used to help with holding the remote for prolonged periods

Room Automation Device | *Arduino, C++*

- Created a multi-functional device that automates various tedious tasks inside of a bedroom
- Utilized the IR library, Time library, and the DHT11 temperature sensor library to develop various functions of the device
- The device includes a DHT11 temperature sensor to map the current temperature and humidity of the room and turns on a fan or heater, by sending IR signals to the respective devices, based on whether it is summer or winter.
- Used the Time library to check what time it is and to turn on the LED lights in the room at the pre-programmed time.

GetAGrip (Robotic Q-Arm that drops off sterilized containers) | *Python, Quanser Interactive Labs*

- Utilized Quanser interactive labs and Python to code and simulate a robotic Q-Arm that accurately picks up, transfers, and drops off a sterilized container based on size and colour
- Used the built-in colour sensors on the Q-Arm to detect the colour and use predetermined data about the size of the sterilized container, to drop the container off at its respective autoclave
- Utilized Pythons random module to simulate different occurrences of which container was spawned and in what order. This allowed us to accurately test that the Q-Arm's sensors were reading the size and colour of the container properly and dropping it off to its correct autoclave.

Experience

McMaster Rocketry Team **Sep 2023 – Present**
Launch Oversight & Logistics Sub team *Hamilton, Canada*

- Curated a risk assessment Form that analyzes the various risks involved with the launch and created safety measures to combat the risks
- Prepared logistics reports on how to safely use and manage the rocket

IEEE McMaster Student Branch **Sep 2023 – Present**
RPI & Soldering Team Member *Hamilton, Canada*

- Utilized various RPI modules, such as Luma, to develop small projects such as creating a mini sound board with push buttons, and manipulated LED matrices relay characters while changing colour and orientation.
- Learned to develop circuit schematics and modelled a parallel LED matrix circuit on EasyEDA
- Learned how to read circuit schematics and translate the given schematic to a real circuit

Saputo Dairy Products **Jun - Aug 2023**
General Picker *Woodbridge, Canada*

- Effectively oversaw daily inventory management operations, leveraging physical strength to transfer products from incoming trucks to their designated storage areas
- Exercised meticulous attention to detail in upholding rigorous food safety procedures to prevent contamination and maintain optimal sterilization standards