Uday Singh Kanwar

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Education

McMaster University — Expected Graduation, April 2027
Bachelor of Engineering (Software Engineering) — *Hamilton, Ontario*
- **GPA**: 3.94/4.00- Dean's Honor List, **Faculty of Eng Award of Excellence:** $3000

Meta Database Engineer Professional Certificate — June 2024- Present
Database management, Tabular records, Database Administration, SQL and Python syntax, MySQL — *Online*

Hardvard University — May 2024- Present
CS50: Introduction to Computer Science — *Online*

Experience

Sofware Engineering Intern — June, 2024- Present
Intenship-Human Endeavour — *Vaughan, Ont*
- Designed and implemented a fall detection algorithm in C++ on the Arduino IDE. Utilized an ESP32 microcontroller and accelerometer to monitor fall events and trigger automated email alerts through the Gmail SMTP server.
- Currently developing a trilateration algorithm for an advanced indoor positioning system leveraging Ultra-Wideband (UWB) technology to achieve high-precision location tracking .
- Collaborated on setting up a scalable cloud database using AWS IoT services, ensuring efficient data management and seamless integration with IoT devices .
- Applied machine learning using Python and TensorFlow to perform multi-class classification on sensor data.

Sofware Specialist — Feb 2024
MakeUoft Makeathon. — *Hamilton, Ont*
- Competed in the UofT's Makeathon and created a computer vision program for people with dementia.
- Created a program in Python to perform live facial recognition from a user's database using OpenCV.
- Used Taipy to integrate the computer vision program into a website and the pyserial library to set up communication with Arduino board which was programmed in C++ .
- Created a physical device consisting of the Arduino board, servo motors, buzzer and a screen to alert the users.

Software-Computer Engineer — Sep 2023 – Dec 2023
McMaster Sumobot Competition. — *Hamilton, Ont*
- Competed in the McMaster Sumo Bots competition and placed top 5 out of 20+ teams.
- Modelled robot chasis using CAD for 3D Printing (Autodesk Fusion)
- Integrated ultrasonic sensors, IR sensors, DC motors, Arduino Nano, and Motor Drivers power the robot
- Programmed the bot using Arduino IDE in C++ to not go out of the ring and chase other bots out of the ring.

Projects

Library Management Portal | *C++* — Jan 2023-March 2023
- Developed an application using C++ enabling admin login to add books, manage bookings, and users.
- Facilitated student login for book checkouts, catalog searches, and booking returns.

Teacher Announcement Program | *JavaScript, HTML, CSS* — Sep 2021- Dec 2021
- Developed a fully responsive website for teachers to post announcements that students can browse.
- Uses a browser's local storage to store the posted announcements and comprehensive search algorithm using JavaScript.

Sterilization using Q-Arm | *Python* — Sep 2023- Dec 2023
- Worked in a team to develop a program using Python to automate an Robotic Q-Arm to pick up containers and drop them in correct autoclaves for sterilization
- Programmed potentiometers to control the movement of the Q-Arm.

Technical Skills

Languages: Python, JavaScript, C++, HTML, CSS, Arduino, C, MS Power Apps, VBA, TensorFlow, Scikit-Learn
Frameworks and More:AWS, Cloud Computing, OpenCV, Taipy, Git, MatLab, GitHub, Quanser Labs, AutoDesk Inventor(CAD), PCB Design, Ansys Granta, AWS IoT