Heidi Han

2B Mechatronics Engineering

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SKILLS

- **Languages**: C++/C, Python, SQL
- **Tools**: ROS, OpenCV, QT/QML, TensorFlow, Keras, MySQL, Git
- **Prototyping tools**: InVision, Justininmind
- **Operating Systems**: Windows, Linux
- **Hardware**: Arduino, Raspberry Pi
- **Mechanical**: AutoCAD, SolidWorks

EDUCATION

Mechatronics Engineering
University of Waterloo
Sept 2018 – May 2023 (expected)
Related Courses:

- Data Structures and Algorithms
- Microprocessors and Digital Logic; FPGAs, PLC programming
- Computer Structures and Real -Time Systems
- Sensors and Instrumentation
- Engineering Graphics and Design

ACHIEVEMENTS

- Best Community Impact Award at BrickHack6
- Best Hardware Hack at SheHacksIV
- Best Smart Home Innovation Award at SheHacksIII
- Mary N Bales Scholarship

Interests

- Participating in hackathons
- Music/Sound engineering, guitar, piano, bass guitar

WORK

Robotics Testing and Modelling Engineering
Edgewise Robotics – Ontario Die International Jan - Apr 2020

- Coordinated each step of the testing process of an R&D robot– from creating test cases, selecting test cases to run and running them, and reporting the success/failure and timing of runs on **Jira**, working in **Sprints**
- Initiated software tasks to help the efficiency of testing processes using **ROS (Robot Operating System)** in **C++** and writing **Python** scripts
- Independently managed **GUI (Graphical User Interface)** development; prototyped and implemented a new feature on the GUI using **Qt** and **QML** to enhance user experience on machine
- Tools: C++, Python, Qt/QML, ROS (Robot Operating System), Linux OS, Qt Creator, Jira/Confluence, Agile

QA Engineering
Veeva Systems May - Aug 2019

- Engaged in the testing of new products at Veeva Systems, including testing new features, developing test strategies and test cases, regression testing, **UI testing**, **API testing** using **Postman**, and reporting bugs/stories on **Jira/Confluence** as part of the Network-Integration QA team
- Coordinated in weekly **scrum** meetings and took part in other **Agile** methodologies to ensure accurate and timely implementation of specifications
- Tools: MySQL, Postman, Windows OS, Jira/Confluence, Agile

Personal Projects

Turret Surveillance System May 2020

- Created a turret system with 2 degrees of freedom which aims at any motion detected by a **Raspberry Pi** camera module attached to the system
- Implemented a motion detection software using **OpenCV** libraries in **C++**
- Utilized **ROS** to establish connections between the motion detector node and Arduino node
- Tools: ROS (Robot Operating System), OpenCV, Raspberry Pi 4, Arduino, C++

Driver Alert System Apr 2020

- Designed and implemented a program in **Python** to alert a drowsy driver when their eyes are closed by spraying them with water
- Utilized Haar Cascade in **OpenCV** and **machine learning** using **TensorFlow** and **Keras** packages to detect eyes and determine if the eyes are open
- Displayed state of eyes and a live webcam stream using **Qt**
- Tools: TensorFlow, Keras, OpenCV, Qt, Arduino, Python