




# Heidi Han

## 3A Mechatronics Engineering

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## SKILLS

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- **Languages:** C++/C, Python, SQL, HTML/CSS
- **Tools:** ROS, OpenCV, QT/QML, TensorFlow, Keras, MySQL, SQLite3, Git
- **Prototyping tools:** Figma, InVision, Justinmind
- **Operating Systems:** Windows, Linux, QNX
- **Hardware:** Arduino, Raspberry Pi
- **Mechanical:** AutoCAD, SolidWorks

## EDUCATION

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### 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
- Engineering Graphics and Design

## ACHIEVEMENTS

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- Best Community Impact Award at BrickHack6
- Best Hardware Hack at SheHacksIV
- Best Smart Home Innovation Award at SheHacksIII
- Mary N Bales Scholarship
- President's Scholarship of Distinction

## INTERESTS

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- Participating in hackathons
- Music (guitar, piano, bass guitar)

## WORK

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### Software Infrastructure

Ford Motor Company

Sept - Dec 2020

- Designed and implemented bug fixes and stories in **C++** as part of the Application Lifecycle Manager team including code optimization and memory management in **Ubuntu** and **QNX** virtual environments
- Performed testing, maintenance, and analysis of C++ code using **Google Test and Mock unit test framework** and static code analysis
- Gained understanding of database development using **SQLite3**
- Tools: C++, SQLite3, GTest/GMock, Ubuntu, QNX, Jira/Confluence, Agile

### Robotics Testing and Modelling Engineering

Edgewise Robotics – Ontario Die International

Jan - Apr 2020

- Coordinated each step of the testing of an R&D robot, working in **Sprints**
- Initiated software tasks by adding new features in **C++** using **ROS (Robot Operating System)** and writing **Python** scripts to help testing
- Independently managed **GUI (Graphical User Interface)** development using **Qt** and **QML** to enhance user experience on machine as a side project
- 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 and existing products at Veeva Systems, including testing new features, developing test strategies and test cases, regression testing, UI testing, API testing using **Postman**, and database testing using **MySQL** as part of the Network-Integration QA team
- Tools: MySQL, Postman, Windows OS, Jira/Confluence, Agile

## PERSONAL PROJECTS

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### Driver Alert System

- 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