281 Archdekin Drive
Brampton, Ontario L6V 1Z3
Canada
📞 +1 (647)-444-9707
✉ cookj1@mcmaster.ca
🖰 justinmcook.netlify.com
in justin-m-cook
 justinmcook

Justin Cook

Final Year Mechatronics Engineering Student

Highlights of Qualifications

- Currently enrolled in level 4 of a 4-year Mechatronics Engineering co-op program at McMaster University
- Excellent teamwork skills developed working on the Red Hat WildFly team
- Excellent problem solving skills developed through participation in Hackathons
- Project experience with designing, simulating, and implementing digital and analog circuits, including use of several microcontrollers
- Experience with C, C++, Python, MATLAB, Simulink, Shell Scripting, Verilog, SQLite

Education

2015 – 2020 **Bachelor of Engineering, Mechatronics Engineering**, *McMaster University*, Hamilton, ON, Canada.
- Cumulative grade point average of 3.5 on a 4.0 scale
- Enhanced communication and report writing skills through creating a technical report on the possible implementation of a city traffic monitoring solution
- Developed a greater understanding of interfacing software and hardware through the creation of a pacemaker and corresponding GUI for displaying gathered patient data

Experience

May 2018 –
August 2019
Software Engineer Intern, *Red Hat Canada*, Toronto, Ontario, Canada.
Enhanced Red Hat's WildFly/JBoss EAP application server's security subsystem on the WildFly Elytron team.

- Worked on the security subsystem of the WildFly application server project
- Rewrote test suite to use dynamically generated certificates, preventing need to manually regenerate certificates
- Enhanced the audit logging capabilities in the subsystem, providing customers with additional ability to verify their application's security
- Communicated and worked with international team in multiple timezones
- Maintained and enhanced an IRC bot used within the office, helping maintain the office's atmosphere

May - August
2017
Quality and Programming Intern, *A&D Precision*, Concord, Ontario, Canada.
Helped the plant office modernize their website and calibration tracking system.

- Assisted in revision of quality system to meet ISO 9001:2015, helping the company keep the latest quality standards in practice
- Programmed and redesigned the company's website, helping the company present a modern image
- Created full calibration system application, including SQLite database, chart generation, and various methods to view and update quality and calibration data, ensuring high quality standards are maintained

May - August
2016
Quality and Programming Intern, *A&D Precision*, Concord, Ontario, Canada.
Assisted the plant office in their quality workflow, including automating report generation.

- Assisted plant office in creating manufactured part quality reports, to ensure parts are kept to high standards
- Automated human readable report generation from machine readouts through Microsoft Excel scripts, saving the quality control team several hours per corresponding manufactured parts
- Enhanced ability to read engineering drawings by comparing desired part specifications with machine readouts

Extracurricular Activities

Sept 2017 – April 2018
Member & Mentor, *McMaster Sumobot Club.*
- Assisted two teams in the beginner competition with design, implementation, and debugging of their robot over several months
- Developed a 20x20cm robot with a team of 3 other members for the advanced competition
- Utilized Autodesk Eagle to design a custom circuit board to be used with an Arduino Uno microcontroller
- Used Autodesk Inventor and tools, including a welding machine, to build a steel chassis by hand

May 2017 – April 2018
Lab Coordinator & Website Programmer, *McMaster Mechatronics Society.*
- Updated lab to include modern technology and electronics
- Assisted other students with electronics and embedded programming issues within lab
- Created new website for McMaster Mechatronics Society

Sept – Nov 2016
Semi-Finalist, *McMaster Sumobot Club.*
- Participated in the university wide robotics competition
- Developed strong communication, organizational, and leadership skills while working in a team of four as team leader to build a competitive robot
- Performed well in the competition, coming in fourth place

Computer skills

Hardware
Microcontrollers (Arduino, STM32, etc), NI MyDAQ, FPGAs (NI MyRIO, Altera Cyclone II), Oscilloscopes, Motors, Sensors (Infrared, Ultrasonic, etc), Logic Gates, ADCs/DACs, Timers, H-Bridge

Languages
C, C++, Python, MATLAB, Simulink, Shell Scripting, Verilog, SQLite, LaTeX, Java, JavaScript & jQuery, NodeJS, XML, HTML, CSS & Sass, VBA

Tools
Fritzing, Multisim, LabView, Autodesk Eagle, Autodesk Inventor, JetBrains IDEs, Android Studio, Vim, Linux (Ubuntu, Fedora), RTOS (NI), Windows (XP, 7, 8, 10), JIRA, Microsoft Office, LibreOffice

Miscellaneous
CAN, TCP, UDP, SSL (KeyStores, X509Certificates, etc), Maven, WildFly/JBoss EAP

Projects

Sept 2018 - August 2019
Maintainer, *Vilebot.*
https://github.com/oldterns/VileBot

- Utilized Java and Maven to maintain and develop office IRC bot
- Maintained an actively developed open source project that has a large codebase of legacy code
- Enhanced understanding of remote debugging over SSH through issues discovered from deployment on a headless VM

Nov 2018
Participant, *Hack Western 5.*
https://github.com/zainosaurus/SnapCycle

- Utilized Java and XML to design a recycling information with computer vision application
- Achieved a greater understanding of machine learning and Android development
- Enhanced understanding of utilizing phone features for development of Android applications

Dec 2017
Winner, *YHacks 2017.*
- Utilized Java and XML to design a travel assistant Android application
- Enhanced teamwork and communication skills through working with 3 teammates
- Placed first place for the company challenge, as judged by jetBlue employees

Nov 2016
Finalist, *YHacks 2016.*
https://github.com/justinmcook/YHack2016_iRobot_Create_2

- Utilized Python and Flask for Python to interface with iRobot Create 2 robot
- Enhanced computer skills creating web application using HTML, CSS, JavaScript, and jQuery to display data from robot and control it with virtual joystick
- Placed third place for the company challenge, as judged by iRobot employees