Steven Feng

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SUMMARY OF QUALIFICATIONS

- 4 years of experience with software and hardware design with VEX Robotics and hackathons, knowledgeable about embedded systems and sensor integration
- Familiar with PID, RRT algorithms and ROS through design teams
- Experienced with prototyping from 6 unique hackathon projects from the past year alone
- Proficient in C++, Python, and modeling software such as AutoCAD, SolidWorks
- Exceptional independent learning skills from seven weeks of rigorous pilot training

EXPERIENCES

FORD MOTOR MFG SOFTWARE DEVELOPER (C#, Python) *05/2019 – 08/2019*

- Developed automation script using batch, python, C#, and TestStand to automatically flash and systematically test devices through Jenkins
- Prototyped utility on TestStand using C# to flash multiple chips simultaneously, increase efficiency by up to 4 times
- Debugged audio issues for infotainment chips with TestStand and .Net Framework by recreating issues in controlled settings
- Modified and implemented USB and VTI Remote Server utilities using C#

VEX WORLD ROBOTICS CHAMPIONSHIP (C, C++) *10/2015 – 06/2018*

- Designed and constructed the **pneumatic system, holonomic drive**, and reverse double four-bar lift systems. Ranked 2nd and won Create Award (2017) for passive catapult design in VEX Provincial Championship and featured on Global TV and CTV
- Programmed autonomous and remote-control functions for the robot, capable of stack cones autonomously using **PID feedback motor control system**;
- Provincial Tournament Finalist and won Design Award (2018) for professional design, integration of programming and mechatronics systems.
- Led team to top **1.5%** worldwide and competed at VEX World for two consecutive years

PROJECTS

HI-SECURITY (C++, Python) – Hack the North ***09/2019***

- Developed smart security camera capable of physically tracking and identifying faces using **OpenCV** DNN and stepper motors and stream our website using flask
- Oversee development by assigning and defining “Definition of Done” for each task
- Designed camera and shaft adapters using **SolidWorks** and created bill of materials
- Programmed serial communication using **PySerial** and stepper motor drivers on Arduino

PACKAGE DEFENDER (C++) – EngHack [Top IOT Hack] *06/2019*

- Won “Top IoT Hack” by building a package notification system and android app using Arduino, dragonboard (410C), Firebase API, Ultrasonic, infrared sensors, and speakers
- Programmed Arduino with state machine for identifying the status of the package
- Designed circuitry for sensors and integrated into the build platform

VISION SENSE (C++, Python) – MakeUofT [Winner] *02/2019*

- Won 1st place overall by designing wearable navigation and monitoring system for visually impaired using **Raspberry Pi, Arduino**, Azure API, Twilio API, Ultrasonic sensors and stepper motors.
- Designed motor housings using **SolidWorks**, circuitry, and programs for the motors using C++ and assisted in Raspberry PI and Arduino serial communications

SKILLS

LANGUAGEs

C++, C, C#, Python, Bash, Batch, Git

TOOLS

ROS, PuTTY, Jenkins, TestStand

DESIGN

AutoCAD, SolidWorks, Sketchup

EDUCATION

University of Waterloo
Candidate for B.A.Sc Honours
Mechatronics Engineering Co-op
2018 – 2023

ACTIVITIES

WATONOMOUS TRAJECTORY PLANNING DEVELOPER (C++)

04/2019 – Present

- Worked on optimizing goal points generation using C++ and ROS
- Working on waypoint generation using RRT algorithm
- Learning A* search and Dijkstra

WATERLOOP EMBEDDED SYSTEM DEVELOPER (C++) *01/2019 – 04/2019*

- Developed CAN packets for the communications within the hyperloop
- programmed simulator for hyperloop testing using the COSA framework

ROYAL CANADIAN AIR CADET

01/2013 – 06/2018

- Achieved rank of Flight Sergeant and lead 40 cadets on weekly activities
- Earned **Private Pilot License** through national scholarships (2017) and won **Top Pilot Award** for Alberta

AWARDS

- Air Traffic Association of Canada Excellence in Aviation Award (2018)
- 2nd Place in Alberta for Canadian Chemistry Contest (2018)
- 4th Place in University of Waterloo Engineering Competition (2018)
- VEX Robotics Design Award (2018) and Create Award (2017)