

OWEN BRAKE

Waterloo Mechatronics Engineering · OwenBrake.com · (647)548-5493 · obrake@uwaterloo.ca

SKILLS

Programming Languages: Java, Go, C/C#/C++, Javascript, Python, PHP, LAMP Stack, Angular, Bash Scripting
Mechanical Design: AutoCAD, Solidworks, Geometric Dimensioning and Tolerancing
Software: Git, LLVM, Docker, STM32CubeMX, OpenCV, Beaglebone, FreeRTOS, Linux, PID Control
Electrical: Soldering, Op-Amps, Function Generator and Oscilloscope Usage

PROJECTS AND TEAMS

Isidore, Custom Programming Language

December 2019 - Present

- Deployed JIT compiled, cross platform programming language with custom Lexer and AST Tree built in LLVM API using C++.
- Designed language to enforce programming best practices and code readability to minimize technical debt and maximize codebase maintainability

Waterloo Formula Electric Team

September 2019 - Present

- Developed firmware for Wheel Speed Board and IMU using C on FreeRTOS system to collect and handle sensor data for improved control and further data analysis

Self Driving Go Kart Team

July 2019 - Present

- Designed and manufactured gearboxes to allow motor control of steering
- Utilized Arduino, motor controllers and RC radio to allow remote control of Go Kart.
- Produced computer vision and control software in OpenCV and Python

PCHackers

May 2018 - May 2019

- Acquired various major sponsors and negotiated with the University of Toronto to fund Canada's largest high school student run hackathon with a budget of \$20,000
- Oversaw MLH certified hackathon management including guest speaker allocation and food distribution for over 200 participants
- Managed the judge selection including bringing in industry and education professions as well as oversight of the judging process to ensure a fair and objective process and the selection of the best project as winner

Vex Robotics

September 2015 - July 2019

- Programmed autonomous and manual robot control using various software motion control algorithms in C based language
- Founded private robotics team (6ix Robotics - 2018) with 12 members and raised over \$15,000 from corporate and private sponsors including Deloitte, IBM and Mazda
- Club President(4659 Warrior Robotics - 2016), supervised over 100 members, ensured deadlines were met and promoted the sharing of skills and learning throughout the club
- Qualified and competed in the VEX Robotics World championships in Louisville Kentucky against teams from across the globe including China, Germany and Nigeria

WORK EXPERIENCE

Software Engineer

Summer 2019

Groupdesk

Toronto, ON

- Developed CRUD services, using Angular to remove user dependence on technicians
- Upgraded UI to Material Design using AngularJS and CSS to enhance site appearance and improve usability
- Built Google Analytics system from the ground up, to better understand user behaviour and identify user priorities
- Automated front end QA using Go, Docker and Chromedp to increase release efficiency and stability
- Reported and resolved bugs using Pivotal Tracker to optimize the customer experience

Data Entry

Fall 2016

Liberty Metrics

Mississauga, ON

- Used Google Sheets and Excel gather online hotel booking data for future analysis of data mining company

Umpire

Summer 2016

Mississauga Majors Baseball League

Mississauga, ON

- Officiated games, resolved conflicts and mediated disputes over umpire rulings

INTERESTS

Long Distance Running

Motorcycle Enduro Riding

Rock Climbing

Astronomy