OWEN BRAKE

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

SKILLS

Programming Languages:	Java, Go, C/C#/C++, Javascript, Python, PHP, MySQL, 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 motor control steering gearboxes
- 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 major sponsors and negotiated with the University of Toronto to host Canada's largest high school student run hackathon with a budget of $20,000 and over 200 participants
- Oversaw MLH certified hackathon management including allocation of industry speakers 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
- 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

- Online data mining and compiling of hotel booking data

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