Ganan Sivagnanenthirarajah

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Skills, Tools & Abilities

- **Proficient in:** C#, C++, C, Java, Python, React Native, HTML, CSS, JavaScript, PHP, MySQL & PowerShell
- **Tools Used:** OpenCV, Tesseract OCR, Selenium, Arduino, Raspberry Pi, cPanel, & Visual Studio
- **Project Management:** Set deadlines, prioritized tasks and worked with sub-teams to complete projects
- **Leadership & Communication:** Led presentations and meetings for 100+ students, sponsors & judges

Experience

Software Developer

Nielsen – Markham Office — Jan 2019 – Apr 2019

- Created an application to recognize products in flyers using **OpenCV**, **OCR**, **machine learning** and user input
- Programmed an application to identify a product's origin by reading its label using **Tesseract OCR**
- Automated the retrieval of flyers from consumer websites using **Selenium** and **C#** code

Hardware & Web Developer

City of Toronto Water – Process Control Systems: Networking — Apr 2018 – Aug 2018

- Designed, built and implemented a **web-based ticketing system** for internal forms to increase efficiency
- Prototyped a **wireless relay** to remotely control power to a Data Collection Unit with a web interface
- Assisted in various networking tasks such as replacing switches and mapping wireless connection

FIRST Robotics Team 6632 Founder, Former President, & Mentor

Northview Heights Secondary School — Jan 2016 - Present

- Led a team of **100+ members** to Rookie All-Star & Judges' Awards in district level competitions
- Managed a **$40 000 budget** by securing sponsors and grants for parts, trips and workshops
- Integrated pneumatics, motors, roboRIO (main controller) and power distribution panel
- Currently mentoring in designing, prototyping and building a 33"x28" base by 55" tall robot

Projects

MakeUofT 2019: Smart Gym Gloves

Tools Used: Arduino, React Native, ESP8266 (Microcontroller), 3D Motion Capture Hardware — Feb 2019

- Captured **3D motion**, identified 3 activities (i.e. bench-press) and analyzed data on accuracy of form
- Gloves provided live feedback as information was processed by a microcontroller then sent to the cloud
- Created a mobile app where users can track progress, learn how to improve and prevent future injuries

Home-Cooked Food App

Tools Used: Lean Business Canvas, Android Studio, Java — Jan 2018

- Analysed market interest for international meals and created a business model to solve this issue
- Recruited individuals to prototype and develop an **Android application** which was sold to an investor

Linux Bluetooth Door Security System

Tools Used: C, C++, Onion Omega 2 (Microcontroller), Bluez Library (Linux Bluetooth), Embedded System — Dec 2017

- Designed a proximity triggered security system that detected a mobile device to unlock a door
- Computed various statistics that were logged into a text file on an **Onion Omega 2** in real time
- Developed Bluetooth features using **Linux Bluez** library then programmed using **C** and **C++**

Education

University of Waterloo — 2017-2022

- Candidate for Bachelor of Applied Science – BASc, Electrical Engineering
- FIRST Robotics Alumni