Stephen Yang

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EDUCATION

University of Toronto, 2019-2024, B.ASc Computer Engineering, *cGPA: 3.76*, *Dean's Honour List Fall 2019*

〉 Relevant Coursework: Digital Systems, Computer Fundamentals, Circuit Analysis, Linear Algebra, Calculus

University of British Columbia, 2018, Math 200 – Calculus 3 (Dual Enrollment/Access Studies)

EXPERIENCE

Orbis Communications LLC, Vancouver, July 2018 – August 2018

〉 Developer working on prototype Android app using **Bluetooth Mesh** and **Bluetooth LE** (low energy) technologies
〉 Assisted in development of company website and forums.

University of Toronto Hyperloop Team – Pod II R&D LIM Lead, November 2019 – Present

〉 Leading a small team of engineers focusing on LIM (Linear Induction motor) and TFLIM electric drive design.
〉 Part of the POD II R&D Technical Team working on developing an advanced contactless propulsion and levitation system for implementation in future hyperloop pods. Designed code in **MATLAB** and **VBS** for parameterization and parallel processing of simulations.
〉 Performed **FEA** simulations using **ANSYS Maxwell**, **Simcenter MagNet** and **FEMM** for electromagnetic levitation/propulsion devices including Halbach Arrays, Electrodynamic wheels, DLIM's (Double-Sided LIM) and TFLIM's (Transverse Flux LIM).

IEEE University of Toronto Student Branch – Tech Team Associate, April 2020 – Present

〉 Developed and presented hardware workshops introducing **Arduino** and **Motors & Actuators** to engineering students, as well as web development workshops covering **React** and **HTTP/REST** requests.
〉 Working on a 3D scanning project involving photogrammetry and SFM using **COLMAP** and **OpenCV-Python**.

University of Toronto Aerospace Team - UAS Division, September 2019 – January 2020

〉 Developed software for the UAS (Unmanned Aerial Systems) division to be used in annual AUVSI SUAS and USC student competitions.
〉 Developed **ROS** packages containing data augmentation algorithms to increase training set size for other ML Models.

St. Georges High School Robotics Team – Team Captain, December 2015 – September 2019

〉 Worked on software and hardware design for an AUV (Autonomous Underwater Vehicle) to compete in annual AUVSI Robosub competition.
〉 Worked with IMU's including the **OS5000-USD** digital compass, MEAS pressure transducer, **CMU5 Pixycam** sensor as well as the **Jetson TX2** and **Raspberry Pi** microcontrollers. Designed software library and control system for the Seadrone propulsion system in **C++** and **Python**
〉 Researched literature and designed in **Fusion 360** custom housing and Kort nozzles for twin 72W motors.
〉 Achieved 13th Place out of 50 as a team in 2017 International AUVSI Robosub Competition.

PROJECTS

SmartHome [Personal Project]

〉 Building small hardware hacks to improve quarantine QoL for my apartment.
〉 Used **Raspberry Pi** and the camera module to detect visitors at the front door.
〉 Hacking a standing desk to improve basic up/down lift functionality by implementing custom features like preference memory and a desktop UI. Used **Arduino** and **HC-SR04** Ultrasonic Sensors to implement a controller. Designed a UI in **Python** to control functionality.

2020Vision [Medhacks 2020]

〉 Worked within a group of 3 to develop a website addressing quality care during the COVID-19 pandemic that provides stay-at-home eye exams using **Google Cloud** for Medhacks 2020. Developed the backend examination features using **Python Flask**, **Recorder.js** and **HTML**.

House Search [NWHacks 2019]

〉 Worked in a group of 2 to develop a house location algorithm using the **RetsRabbit** API for NWhacks 2019.
〉 Developed code for the backend using **Python Flask**

AWARDS

205th Place out of 4852 students (Top 5%) in 2019 Avogadro National Chemistry Exam
Realtor.ca Prize at NWHacks 2019 for HouseSearch application
Google Cloud COVID-19 Hackathon Fund at Medhacks 2020 for Vision Checker (2020Vision) application

SKILLS

Design: Solidworks, Onshape, ANSYS Maxwell, Simcenter MagNet, Autodesk Fusion 360, Autodesk Inventor, FEMM , LateX, Lightroom
Programming: MATLAB, C++, C, Java, Python (Numpy, TF/Keras), Kotlin, VBS, JS, HTML, CSS
Interests: Hiking, Technology, Formula 1, Reading, Video Games, Photography [landscape, portrait]