PHIL NGUYEN

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Education

Concordia University - Montreal, Canada **Aug 2019 – June 2021**

Master of Engineering in Electrical and Computer Engineering *GPA: 3.42/4.0*

- Relevant Coursework: Digital Design, Hardware Verification, Digital Signal Processing, Computer Vision, Embedded System, Software Development, Robotic, Mobile Application Development, Web Development, Artificial Intelligence, and Deep Learning.

Technical Skills

Languages: Python, C++, SQL, MATLAB, VHDL, Verilog, System Verilog.
Technologies/Frameworks: Visual Studio, Android Studio, TensorFlow, React, Flutter, Git.
Electronic tools: Altium Designer, QuestaSim, SolidWorks, Microsoft Office.

Experience

Time Motion Limited Company **Jan 2018 – Feb 2019**

Computer Engineer *Da Nang, Viet Nam*

- Participated in full life-cycle hardware development including requirement analysis, architectural design, feature implementation, unit and functional testing, and feature delivery.
- Slashed hardware development cost 30% by designing printed circuits board (PCBs) and product housing.
- Technologies: ARM, 3D Printing, C, Altium, SolidWorks, Arduino.

Bosch Engineering and Business Solutions Vietnam **Jan 2017 – June 2017**

Computer Engineer Intern *Ho Chi Minh City, Viet Nam*

- Implemented the Hill-Start Assist Control (HAC) algorithm and bug fixes for BOSCH electric scooters and engine-powered motorbikes.
- Refactored legacy code in the system to follow standard design patterns and improve the code base maintainability.

Projects

Automated Plant Nutrient Monitoring and Disease Detection System (Deep Learning and CV application) | *[Demo]*

- Monitored plants' temperature and humidity indexes using sensors and an ARM-based microcontroller.
- Built an Android application using TensorFlow Lite with EfficientNet-Lite4 DNN architecture that allows users to detect plant diseases running offline on mobile devices.
- Architected the back-end system in Python, delivering temperature and humidity data to the Internet via APIs, allowing users to keep track of plant crucial indexes.
- Integrated an SQLite on mobile devices to improve data query speed up to 30% compared to fetching data from clouding.
- *Utilized: Java, Python, Flask, Django, SQLite.*

High-Speed Tracking with Kernelized Correlation Filters (CV application) | *[GitHub]*

- Accelerated tracking mechanism by 20% with Kernelized Filters using OpenCV and NumPy libraries.
- Generated thousands of negative samples to train the system by applied cyclic shifted in frequency domain.
- Reduced the computation complexity of finding objects from $O(n^3)$ to $O(n \log(n))$ when using inverse Discrete Fourier Transform.
- *Utilized: Python, NumPy, OpenCV.*

E-commerce App with Payment Gateway (Web Application) | *[Web] [GitHub]*

- Developed a high-performance customer-facing e-commerce application with cloud-based storage and authentication.
- Built cross-browser compatible and accessibility compliant website, resulting in 22% faster in loading time
- Maintained high-level expertise in React state management strategies, including Redux-saga and Context API.
- Constructed custom components for UX-library and leveraged Container Pattern for UI development.
- *Utilized: React, Redux, Redux-saga, Redux-persist, React-hooks, React-Routers, JavaScript, HTML, CSS, SCSS, FireStore, Firebase, Heroku, Stripe Payment.*

Certifications

- **Convolutional Neural Networks in TensorFlow**
- **Data Structures and Algorithm in Python [GitHub]**