

# Keith Choa

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## PROFILE

- Computer Engineering co-op student with strong industry experience in developing real-time embedded systems, collaborating in an agile/scrum environment, proficient in C/C++ (7 years), .NET, and in building web tools with Python, PHP, Javascript (React.js, Node.js), SQL, and MongoDB.

## WORK EXPERIENCE

### ecobee

*Embedded Software Developer, Part-Time*

*April 2020 - June 2020*

- Deployed Python-based systems for remote data acquisition in XML format on test fixtures worldwide, allowing for production monitoring of 100,000+ commercial units of smart home devices in a MongoDB database

*Embedded Software Developer, Co-Op*

*January 2020 - April 2020*

- Designed and tested software in C++/CLI (.NET framework) to improve and streamline the calibration process of test fixtures used to qualify more than 10,000 units of smart home sensors per month
- Developed and implemented computer vision software in OpenCV (on C++) to verify LEDs in ecobee's new line of SmartSensors, which reduced test set-up time by 75%, improved test quality by establishing 4 distinct, critical test parameters, and decreased cycle time to save over 15 total hours of production time
- Planned and created an interactive manufacturing dashboard tool written in Python that extracts data from a hosted MongoDB database with optimized aggregation pipelines, displays several production-critical data points, and gives manufacturing engineers completely new capabilities to analyse data
- Consulted and collaborated with hardware and manufacturing engineers to continuously pioneer new solutions and technologies for complex problems in a time-sensitive production environment

### Artesyn Embedded Technologies, Inc.

*June 2019 - August 2019*

*Intern*

- Conducted EMI, Over/Under Current/Voltage, Waveform Distortion, and Thermal Behaviour tests for products within the design engineering department of a \$100 million Industrial Power Supplies company, increasing productivity by 20%

## PROJECTS

### lectr.me @ DeltaHacks VI

*January 2020*

*Full-Stack Lead Programmer*

- Awarded the **Best Education Hack** among over 800 other participants [[devpost.com/software/lectr-me-4nlmxt](https://devpost.com/software/lectr-me-4nlmxt)]
- Developed an audio manipulation algorithm to optimize online learning for university students in Python, using an interface written in PHP, hosted on a Apache web server over a 2-day period
- Presented and pitched the new product to multiple industry professionals, with a 100% approval rating

### ISM VEX Robotics Team

*August 2016 - December 2019*

*Co-Lead Programmer (C/C++)*

- Placed in the top 3 ISM teams and represented our school for 3 consecutive years (2017-19) at the East Asian Regional VEX Robotics Competition in Taipei, Taiwan; Awarded the 2018 VEX Innovate Award
- Co-led the Robotics team in designing software for both remote-controlled and autonomous mechanical robotic motion

## EDUCATION

### University of Waterloo

*August 2019 - June 2024 (expected)*

*BASc. Computer Engineering (co-op)*

- Ranked 13th out of 279 students (top 5%) with an overall GPA of 91% (4.0 GPA); awarded the Richard and Elizabeth Madter Entrance Scholarship and the President's Scholarship of Distinction

### International School Manila (ISM), Philippines

*August 2015 - June 2019*

- Graduate of the International Baccalaureate (IB) Diploma Program, with a score of 43 out of 45