

University of Waterloo
Co-operative Work Terms

Keith Choa
20816060

1B Computer Engineering, Honours, Co-operative Program

Work Term	Employer	Evaluation
Jan - Apr 2020	ecobee Divisional Office Toronto Ontario Canada Embedded Developer	VERY GOOD

Planned Future Work Term(s)

Sep - Dec 2020
May - Aug 2021
Jan - Apr 2022
Sep - Dec 2022
Sep - Dec 2023

Disclaimer: This evaluation does not constitute an employment endorsement or recommendation. Employer evaluations of student contributions and achievements during the work term are conducted as part of the University of Waterloo's Co-operative (Co-op) Education model. Like academic grades, overall evaluations are part of the assessment of a student's progress in the co-op portion of their degree studies. These assessments are completed using criteria set out by the University, not the employer, and do not reflect the employer's criteria or assessment metrics.

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]
- 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

UNIVERSITY OF WATERLOO

UNOFFICIAL GRADE REPORT

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Spring 2020

ECE	102	Information Session
ECE	106	Electricity and Magnetism
ECE	108	Discrete Math and Logic 1
ECE	124	Digital Circuits and Systems
ECE	140	Linear Circuits
ECE	192	Eng Economics Impact Society
MATH	119	Calculus 2 for Engineering
Term Average:		N/A
		Decision:

Winter 2020

COOP	1	Co-operative Work Term	CR
PD	20	Eng'g Workplce Skills I:	CR
Term Average:		N/A	Decision:

Fall 2019

ECE	105	Classical Mechanics	89
ECE	150	Fundamentals of Programming	89
ECE	190	Eng. Profession & Practice	100
ENGL	192	Comm in Eng (COMPE, ELE, MGTE)	87
MATH	115	Linear Algebra (Eng)	97
MATH	117	Calculus 1 for Engineering	90
Term Average:		91.27	Decision: Excellent standing