



Charles Leung



Computer Systems Tech. Student

Mechanical Engineering Graduate

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A passionate recent Mechanical Engineering graduate who is pursuing further studies in Computer Systems Technology, and a career in software development. With a creative and analytical mindset, I strive to provide innovative software solutions to bridge user requirements in an inclusive, team oriented manner.

TECHNICAL SKILLS

*Currently learning July 2021

Languages	Python, Java, C/C++ (Arduino), MATLAB, Javascript & Node.js*, HTML/CSS*
Libraries	React.js*, Ruby on Rails*
Software	SQL*, Jira/Confluence, Git, AutoCAD, Solidworks, Navisworks, Revit, Trace, Microsoft Office, Siemen's NX, ANSYS
Hardware	Arduino, Multimeter, Signal Generator, PSIM, Oscilloscope, DAQ
Mechanical	Lathe, Mill, Drill-press, 3D Printer, Motors, Controls, Sensors/Signals, Waterjet
Coursework	Software Data Structures, Algorithms, Object Oriented Programming (OOP), Agile Methods and Scrum Framework
	Mechanical Thermodynamics, Mechanical Design, Vibrations, Mechanics of Materials, Automation and Control, Fluid Dynamics, Heat Transfer

WORK EXPERIENCE



Williams Engineering Canada

Sept. 2019 – Present

Mechanical Engineer

[Agile Methods](#), [AutoCAD](#), [Python](#), [Trace](#), [Excel](#)

- Led the **transformation** of current project management structure to an **agile/scrum framework**, acting as **scrum leader** for future projects
- Manipulated **ventilation/thermodynamic data** on Trace **algorithms** using **Python** and Excel to accurately display load calculation for project space
- Engineered and **analyzed mechanical** systems using **AutoCAD** for landmark buildings in the lower mainland, including Broadway & Cambie office tower, Richmond Library, and YVR Airport



Stantec Consulting Ltd.

Sept. 2016 – Dec. 2016 and Jan. 2018 – Aug 2018

Mechanical Engineering Intern

[AutoCAD](#), [Revit](#), [Project Management](#)

- Simulated building designs** using **Revit** in various buildings across the country to ensure coordination between different disciplines
- Studied technical documents and building codes to adhere to design standards
- Acted as a **project manager** by communicating with various project **stakeholders** to ensure tight deadlines are met



Seaspan ULC

May 2017 – Aug. 2017

Planning and Production Intern / Mechanical Engineering Intern

[Excel](#), [Python](#), [Navisworks](#), [IFS](#)

- Designed a new **data management interface** to organize production and product data in an easy-to-read format via **Microsoft Excel VBA Coding** and **Python**
- Mechanically designed **three (3) new offshore fisheries** science vessels (OFSV), a marine biology research hull for the Government of Canada
- Used **IFS** to manage and extract inventory and production data to identify **critical paths/tasks**
- Exercised flexibility in design by providing immediate and effective mechanical solutions that will minimize production delay



Wexar/Bel Packaging Inc.


May 2016 – Aug. 2016

Engineering Support (Co-op)

[Python](#), [Solidworks](#), [PLC](#)

- Participated heavily in the **R&D Team** by becoming **scrum leader**
- Undertook a **major cost reduction software/mechanical project** for their new Rapid-Load Packaging robot
- Proposed and engineered mechanical and software design modifications through **Solidworks**
- Created **unit and integrated test cases/mechanisms** to ensure designs are working effectively


TECHNICAL PROJECTS

-  **Zense (Software/Mechanical Engineering Capstone)** Sept. 2018 – Apr. 2019
Mechanical Engineering Team Lead [C/C++ \(Arduino\)](#), [Solidworks](#), [Python](#), [Sensors](#), [Raspberry Pi](#)
- Developed a suite of **passive Bluetooth sensors** to **alleviate safety risks for Alzheimer patients** living at home, detecting:
 - Heat** (from a forgotten stove) ○ **Vibration** (from the user falling)
 - Flow** (from a forgotten faucet) ○ **Motion** (from the user getting lost)
 - Generated, **tested, & verified proof of concept** via Arduinos, Raspberry Pi, sensors, & 3D prints
 - Oversaw **coding/algorithm generation** using Arduino (C/C++) to implement detection methods
 - Engaged in various **entrepreneurship competitions** and won over **\$15,000 in funds** (see competitions and portfolio for details)
 - Used **GitHub to collaborate** with other team members to keep our workflows in sync
 - Designed **mechanical chassis** to house and **integrate** sensors together



- Fireboat Project** Apr. 2016
Mechanical Engineering Student [Solidworks](#), [MATLAB](#), [Arduino \(C/C++\)](#)
- Designed a **remote-controlled boat** to **deploy pressurized water** a specified target
 - Tested and collected data through flow simulations and **MATLAB** trajectory estimations

STUDENT TEAM INVOLVEMENT

-  **UBC UAS (Unmanned Aircraft System)** Sept. 2016 – April 2018
Mechanical & Hardware Systems Team Lead [Jira/Confluence](#), [Agile Method](#), [Motors](#)
- Led the design and construction of the **ground control navigation system** to communicate and process information to and from the drone via **sensors, actuators and motors coded in C/C++**
 - Promoted and prioritized team synergy using **Jira/Confluence** to **manage sprints and backlog**, to provide transparency and promote synergy within the team

COMPETITIONS

- Innovation Onboard Finals – (Zense)** Jan. 2019
1st Place - \$5000
- New product investor pitch competition against 20 teams. Our product: Zense (described above)
- Unmanned Systems Canada – (UBC UAS)** Apr. 2018
3rd Place
- Competed drones against universities across Canada to complete technical challenges described by adjudicators. Drones are constructed and tuned via participation in UBC UAS.

ACCOMPLISHMENTS AND AWARDS

- Dempsey Startup Comp. – Best IoT Venture (Zense) – \$5000 May 2019
NVD Dempsey Startup Comp. – Best IoT Venture (Zense) – \$5000 Apr 2019
NVD Best Prototype Award (Zense) – \$1000 Apr 2019
NVD Most Investible Award (Zense) Apr 2019
RBC Get Seeded – Award Winner (Zense) – \$1000 Sept. 2018; Jan. 2019
UBC Chancellor Scholar Award 2018

EDUCATION



- British Columbia Institute of Technology (BCIT) – Computer Systems Technology (B.Tech)** 2020 – Present
Applied Software Development



- University of British Columbia (Vancouver) – Bachelor of Applied Science (B.ASc.)** 2014 – 2019
Mechanical Engineering
- Dean's List (2016-2019)
 - Cooperative Education Program