

EDUCATION

University of Michigan / Coursera

August, 2019 – Present

Specialization: Applied Data Science with Python (Certificate Track)

Coursework: Pandas, Text Mining, Data Visualization, Machine Learning

University of British Columbia

September, 2014 – May, 2019

Major: Bachelor of Applied Science - Electrical Engineering;

Coursework: Structures and Algorithms, Computer Communications, Computer Architecture, Signal Processing, Digital Design

WORK EXPERIENCE

UBC - Centre for Teaching, Learning, and Technology

September, 2017 – May, 2018

Course Migration Automation and Support

Link: <https://github.com/alchammatg/connect-canvas-migration-scripts>

- Proposed the idea, then voluntarily automated migration of courses through the **Canvas LMS API** using Python (tasks include file to wiki conversion, html modification, and restructuring hyperlinks), cutting down course migration time from 6 to 2 hours.
- Designed and developed a **Tk GUI** which allowed other users to migrate over a thousand courses using the scripts.
- Migrated and formatted web content for 200 courses, and supported faculty members in learning the new interface.
- Built multiple surveys with **branch-logic in Qualtrics** that were published by Faculty of Education.

TECHNICAL PROJECTS

Trading Analysis Web Application

September, 2019 - present

Link: <https://github.com/alchammatg/fullstack-finalysis>

- Implementing a **Model-View-Template** backend using **Django** to retrieve market data from a local **SQL** server and return pages stocked with currency-pair data.
- Designing an **object-oriented** architecture to control data acquisition from third party **APIs**.
- Planning to build a frontend where users can markup stock charts and save their analysis.

Visual Sorting Algorithms

September, 2019

Link: <http://alchammatg.github.io>

- Synchronized and animated multiple sorting algorithms inline using **generator functions** and **animation frames** in **plain Javascript**.
- Designed and built simple UI showing various sorting algorithms and animation controls.

IoT Gateway Development (UBC Capstone)

September, 2018 – April, 2019

- Upgraded a **Python**-based IoT Data Exporter which is part of a client's iEMS by developing and integrating a **Qt GUI**, **asynchronous** HTTP retry queue, automation through the client's **RESTful API**, and an installation file.
- Emulated end-user sites by running local **MS SQL** servers to generate data and analyze performance.
- Collaborated with four teammates on all phases of the project with help of tools including **GitHub**, **CI**, and **Trello**.
- Wrote initial requirements, design, and testing documents based on meetings with the client, and flexibly changed the documents and workflow as the client's needs changed.

Haptic Interface Robot

January, 2017 – April, 2017

- Programmed the real-time behavior of an Arduino microcontroller in **C** to use incoming position measurements to compute and execute the desired behavior of two linear motors, and interfaced with **Matlab** using **SPI**.
- Designed and ordered PCBs capable of controlling the power signal to the motors and digitizing sensor data.
- Implemented **Interrupts** and **Dynamic Programming** to achieve efficient live performance.

SKILLS

- Python: (OOP, database operations, concurrency, threading, GUI, data science), C: (structures, algorithms, timer interrupts), Javascript, HTML, CSS, debugging (GDB, PDB)
- SSH, Terminal, CMD, GIT, Agile