# Colton Williams

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## TECHNICAL SKILLS

**Software**
- HTML/CSS/Javascript
- Python
- React.js, Django
- PHP/SQL
- AWS
- C

**Hardware**
- PCB Design (Eagle/Altium)
- Soldering
- Circuit prototyping
- Basic lab equipment

## EDUCATION

**UBC Vancouver**
*Bachelor of Applied Science*
*Electrical Engineering Option*

## PROJECTS

### Spotify Django App (Python/Django)                                  February 2020 - Present
- Currently working on a Django app which analyzes audio features, such as danceability, acousticness, valence (mood), from your playlists or recently played tracks, and creates a new playlist based on the analyzed data

### Item Storage App (PHP, SQL)                                          January 2020
- Built a simple application to store, view, edit, and create items with specified (name, weight, length, width, height) properties using PHP/SQL to learn the languages
- Clean, intuitive user interface

### Spotify Recently Played App (React.js, AWS Lambda)                   November 2019 – January 2020

- Built an application to automatically create a Spotify playlist with your 50 most recently played songs (available on my website)
- Designed a simple and intuitive, responsive user interface for the app
- User authentication with OAuth2.0, hosted as an AWS Lambda function

### Personal Website (www.coltontfwilliams.com)                         May – September 2019
- Taught myself HTML/CSS/Javascript and React
- Built a responsive portfolio web application complete with a homepage and about, portfolio, and contact sections
- Created all components from scratch, including an interactive, horizontally scrolling project display and contact form
- Polish such as smooth scrolling to sections through a navigation menu, hidden navigation menu while scrolling, and custom components for different screen sizes, ensuring easy readability

### JFET Boost Pedal                                                     July 2019 – Present
- Currently designing a simple JFET boost guitar pedal for tube-like boost/light gain tones with the possibility of adding multiple gain stages
- 9V power supply stepped up to 23.5V using a switched-mode power supply
- Attenuation control for boost level

### LipSync Evolution                                                    September – April 2018
- As part of a six person team, updated the pre – existing LipSync by Neil Squire Society, a mouth operated computer mouse emulator for quadriplegic persons, to include a Bluetooth option as well as increased functionality

- Overhauled the existing PCB to accommodate a new, Bluetooth compatible microcontroller
- Added extra pins and an additional power port to the PCB for future adaptations
- Wrote a significant portion of the technical documents to be delivered to Neil Squire Society; mainly responsible for the validation document

### Two Degree of Freedom Haptic Interface

**January– April 2017**

- In charge of the control systems within a three person team, in which we built a functional haptic interface using two linear actuators
- Designed, built, and tested a dual H-bridge circuit to control speed and direction of two motors, and soldered the finished design to a prototyping board
- Programmed an Arduino microcontroller to sense the position of an arm attached to a rotary motor, and added closed-loop feedback to simulate a virtual wall when the arm reaches a certain angle
- Performed various tests and measurements on the DC rotary motor, and imported/plotted the results with MATLAB to calculate certain motor parameters
- Built a Simulink model of a DC motor to compare with our behavior, using torque and voltage differential equations, as well as the step response of the motor to find certain parameters
- Implemented our electronics onto a PCB, using Altium Designer, to be used in the final design of our device

## WORK EXPERIENCE

### Kingsley Amplifiers

**February 2019 – Present**

*Pedal Assembler*

- Wire, solder, test, and debug up to two entirely hand wired, tube amplifier pedals a day
- Quickly improved my soldering skills to a high level to meet strict build quality standards
- Refined analog circuitry debugging abilities through having to find and fix various problems

### Folklore Contracting

**May  – August 2018**

*Tree Planter*

- Planted 130,000 trees in Northern BC this summer, earning the number one performance from a first year planter, and the 13th spot in a camp of about 50 planters
- Worked consistent 12 hour days, on a four on / one off schedule, in any conditions from snow to blistering heat for three full months, without missing a single day

### Earls Langley

**July 2011 – February 2019**

*Line Cook/Expediter/Server*

- Greatly increased my interpersonal skills through becoming a server, applying my knowledge of the food and company to deliver an engaging experience to every guest
- Adapted to, and learnt the entire constantly changing menu throughout my work experience, and continually made an effort to stay up-to-date on changes to ensure the highest food quality
- Lead the back of house (kitchen team) when closing the restaurant, which developed fast problem solving skills from often being required to come up with solutions without the presence of a superior
- Took in a large amount of orders every night, organizing and cooking them in a timely matter while communicating with fellow cooks and servers about important matters in the moment
- Integrated into multiple vastly different teams, and complete changes in management during my work experience, increasing my ability to adapt to many different work/management styles

## ACTIVITIES AND INTERESTS

- Rock Climbing/Mountaineering – Climbed the entire Stawamus Chief in Squamish and numerous other large climbs in the surrounding area, and recently attempted trips involving extensive glacier travel on steep slopes
- Guitar and music – Played guitar for over ten years, and have learnt instruments such as piano, trumpet, and drums
- Travel – Visited over 15 countries in my life, and spent three months backpacking Europe and Thailand
- Cooking – Developed a passion for cooking through my line cook experience; typically making most meals from scratch