

Dylan Ashton

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EDUCATION

University of British Columbia

Bachelor of Applied Science in Electrical Engineering, with Distinction

May 2025

Kelowna, BC

TECHNICAL SKILLS AND ACHIEVEMENTS

Certifications: Learn 5 PLCs (Allen Bradley, Delta, Siemens, Omron and Schneider), KiCAD PCB Design, JLPT N1, 153 Points on the Japanese Kanji Aptitude Test Level 1.5, 110 on Level 1

Programming Languages: ARM Assembly, CSS, HTML, Javascript, LaTeX, MATLAB/Simulink, Python, Verilog

Tools: Altair RapidMiner, AutoCAD, Autodesk Revit, GNU Radio, KiCAD, LTspice, OmegaT, SOLIDWORKS, Visual Studio

Other Software: Microsoft 365 (Microsoft Word, Excel, PowerPoint, Outlook, Teams)

PROJECTS - SEE MY WEBSITE PORTFOLIO FOR DETAILS

Assorted PLC Design Projects

May 2025

- Worked with ladder logic across five major PLC platforms (Allen-Bradley, Siemens, Schneider, Omron, Delta), implementing various industrial automation projects in each software environment

Assorted PCB Design Projects

May 2025

- Designed schematics and PCBs for various projects (including power supplies and an IoT board) using KiCAD, utilizing component libraries, layout tools, and translating reference designs into manufacturable boards

Autodesk Revit Electrical Design Project

April 2025

- Created electrical and power plans for a two-storey residential unit, including circuit layouts, panel schedules, and device placements
- Designed custom Revit families (non-hosted pendant ceiling light, floor socket with connector), drafted a one-line diagram using Revit's electrical tools, and created a symbol list using Revit's built-in CAD drafting tools

IoT Sensor Network Project

March 2025

- Developed a virtual IoT network using AWS IoT to simulate a temperature sensor and cloud server, enabling real-time data transmission, unit conversion, and min/max/average tracking using Linux-based virtual machines

Concrete Heating Blanket Capstone Project

September 2024 – March 2025

- Worked in a multidisciplinary team to produce a heating blanket solution by leading heating element implementation for construction industry partner Traine Construction & Development
- Achieved an 85% cost reduction and 45% lower power usage compared to existing commercial solutions, with 35% gains in concrete strength over baseline

M-PAM & M-QAM Software-Defined Radio (SDR) Implementation

January – March 2025

- Designed and implemented PAM, PSK, and QAM modulation schemes using Python-based GNU Radio and a USRP-2901 SDR, enabling reliable real-time wireless transmission with clear constellation recovery
- Implemented higher-order modulation schemes with near-zero error rates as well as developed a custom pilot-based synchronization signal for automatic phase and symbol alignment

Control System Design of a Vehicle Suspension System

September – December 2024

- Worked in a group of 3 to control a model of a vehicle suspension system with MATLAB and Simulink using full state feedback (pole placement), earning a project grade of 100%

Inclusive Design Door Opener

May – June 2024

- Led a group of 6 to design and create a portable, cost-effective door opener using SOLIDWORKS for an individual with a C5-C6 spinal cord injury. The client continues to use this solution over other developed solutions
- Met client requirements in under 6 weeks and 40 CAD by using a custom-designed 3D-printed casing

Heart Rate Monitor

January – March 2024

- Designed and implemented a multistage heart rate monitor circuit using analog circuit components

- Stages included a soldered photodiode/emitter pair connected to a transimpedance amplifier, a high pass filter and gain stage, a noninverting comparator circuit, and a monostable vibrator circuit which drove an output LED
- Verified design using LTspice and implemented the circuit using lab equipment

Brushless Motor Group Project

February – March 2023

- Worked in a group of 5 to design and create a brushed copper-based 3-coil 6V DC double pole motor that was able to rotate for over 30 seconds continuously and received a project grade of 90%
- Utilized both design and mathematical principles found in DC power and electromagnetism as the basis for design
- Adopted a unique fidget spinner rotor-based design to improve rotational speeds

Japanese to English Projects

August 2022 – Present

- Translated and localized articles on specialized engineering topics from Japanese to English using the OmegaT computer-assisted translation software
- Created a brand and WordPress website, Linguiserve, to receive any requests and record project results in a portfolio format
- Created a Google Chrome extension that converts between traditional and simplified Japanese kanji characters and kana orthography, whose scope includes over 6000 character forms, word pairs, and text strings
- Researched over 3,000 traditional/variant forms of Japanese characters, compiling a specialized Google IME user dictionary with over 10,500 entries that allows the user to directly input specialized Japanese characters

EXPERIENCE

Volunteer Community Manager

May 2024 - Present

Don'tFailEng

Online

- Managed an 850+ member student-formed online community for discussing engineering courses and providing peer-based academic support to students
- Ensured smooth community operation by leveraging management and communication skills learned from a course on Engineering Leadership to organize and moderate chat rooms as well as resolve conflicts

Japanese to English Translation and Tool Development

August 2022 - Present

Linguiserve

Coldstream, BC

- Created Linguiserve, a service and long-term project that specializes in translating and localizing documents as well as developing related specialized Japanese language tools
- Produced specialized tools and a resource list for reconstruction into historical character and spelling forms

Clerk

June 2018 - March 2020

Nolan's Pharmasave

Vernon, BC

- Operated cash register for cash and credit card transactions with excellent accuracy levels
- Maintained cash controls by reconciling cash drawer at start and end of each shift, resolving accounting errors and discrepancies
- Improved customer experience by helping locate items and registering for the store's rewards program