Duncan Boyd (he/him) 5th Year Electrical Engineering

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Technical Skills:

- Programming: Python, C, MATLAB, Verilog, VBA
- Design: SolidWorks, Altium Designer, EasyEDA, Fusion 360
- Utility: MS Office, GitHub, Minitab

Education:

University of British Columbia
Expected Graduation April 2025
Bachelor of Applied Science, Electrical Engineering

Work Experience:

Ikomed Technologies Inc., Vancouver, BC
January 2024 – August 2024
Embedded Firmware Engineering Intern

- Built software tools used to develop a novel device designed to treat emphysema
- Created APIs using USB, Ethernet, and wireless communication
- Developed user friendly Python GUIs for the control of our device and sensor tools during bench and in-vivo testing
- Wrote firmware for custom Bluetooth Low Energy devices that recorded temperature and humidity data during live tests
- Used Python scripts to perform data analysis on 3D simulation and test data and drew comparisons using statistical analysis tools

Cellcentric GmBH & Co. KG, Burnaby, BC
May 2023 – December 2023
Manufacturing Engineering Intern

- Aided in the development and testing of next generation hydrogen fuel cells for trucks
- Used Excel to create a streamlined process for recording and visualizing over 100 cell leak tests
- Redesigned existing quality tests for prototype fuel cells using ISO standards and confirmed their effectiveness by collecting and analyzing test data
- Performed statistical analysis using Minitab and presented results to inform production decisions

University of Calgary, Calgary, Alberta
May 2022 – August 2022
Student Researcher

- Learned Python, GitHub, and cluster computing to train a machine learning model capable of improving the quality of MRI images
- Used a novel method of dealing with complex MRI data resulting in 20% fewer training cycles
- Summarized research with abstracts, posters, and presentations at two symposiums

Student Teams

UBC Aerodesign Team, University of British Columbia
September 2021 – April 2024
Advanced Fuselage Member, Advanced Sensors and Controls Member

- Developed landing gear using SolidWorks for remote control aircraft
- Using Altium Designer, redesigned a sensor PCB for the collection of flight data
- Used I2C and SPI protocols to collect data from an airspeed sensor and verified the data using a wind tunnel

UBC Red Cross Club, University of British Columbia
May 2023 – Present
Treasurer, Marketing Director

- Organized finances using Excel sheets and a detailed file structure to improve readability for other members
- Coordinated a small team to create marketing materials and develop a website

Engineers Without Borders UBC, University of British Columbia
September 2022 – August 2023
Youth Venture Member

- Used Onshape to create instructional videos for high school students and mentored them during CAD workshops and a design competition

Technical Projects:

"Dashlight" OBD Display, Personal Project
October 2023 – Present

- Build a PIC32 based system to communicate with my car using the OBD port and display information on a 7-segment display
- Designed a PCB using EasyEDA host the microcontroller and all peripherals

Coin Collecting Robot, University of British Colombia
March 2022

- Created a wheeled robot on a PIC32 system to detect and pick up coins within an area
- Wrote a detailed report on the system design, sensor testing, and integration

Awards and Certifications:

- Abdul M. Mousa Scholarship in Engineering
- Jim and Helen Hill Memorial Service Award in Electrical Engineering
- Certified SolidWorks Associate – 2021
- DELF B2 French Certification – 2020

Interests and Hobbies:

- Alpine ski racing up to the FIS level
- Mountain biking, hiking, and paddling
- Learning piano
- Vehicle maintenance
- 3D printing and CAD design