



Trevor Daykin

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PROFILE

My goal is to be a part of the innovative technology scene. In my recent role at a leading global fuel cell company, I took the initiative and pursued a variety of projects, from liquid injection molding to particle analysis. From there, I honed my ability to lead in an ambitious environment while emphasizing my accountability and meaningful contributions.

EDUCATION

3rd Year UBC Engineering Physics, BASc

University Of British Columbia

Sept. 2021 – Present

Vancouver, B.C., Canada

- Engineering Physics is the bridge between Engineering and Science combining advanced concepts in math and physics while putting them to practical use in team-based projects
- Key Courses: software construction, signal processing, mechanics and instrument design

TECHNICAL EXPERIENCE

MEA Process Engineer Co-op, Advanced Manufacturing

Ballard Power Systems

Jan. 2023 – April. 2023

Burnaby, B.C., Canada

- Applied a structured approach to qualify an upcoming Liquid Injection Molding process; involving data collection, capability/GR&R analysis, and ultimately, a presentation of results in a lean six sigma environment
- Hands-on experience in operating Liquid Injection Molding machines including: troubleshooting and control over molding parameters
- Developed and implemented automated data analysis in excel, transforming raw data into actionable insights; increasing overall efficiency by 98%
- Accelerated production times by 75% through rapid prototyping of 3D printed fixtures designed in Creo
- In-depth knowledge on the manufacturing and development of fuel cells

TECHNICAL PROJECTS

Autonomous Driving Robot Competition: 2nd Place | CAD, Machine Shop, C++

- Brainstormed, designed and manufactured an autonomous robot with a group of 4 to race on the same track as other robots, all while passively picking up and avoiding certain objects
- Created the entire chassis, ensuring all sensors, circuits and mechanical components function as intended, quickly prototyping drawings by using 3D printers and laser/waterjet cutters
- Implemented and tuned a PID algorithm in C++ so the robot can follow tape smoothly through custom made tape sensors controlled by an STM-32 Blue Pill

Nand2Tetris: Project Course | HDL, Gate Logic, Git

- Designed digital logic circuits using Hardware Description Language (HDL), combining various logic gates and sequentially developing larger components of a modified computer system
- Developed an understanding of computer architecture by building a modified computer system from the NAND gate up; learning knowledge of CPU architecture, ALU design, and memory systems

Canadian Synthetic Biology Education Research Group, SYNBB | Python: scikit-learn, NumPy, pandas

- Assisted in the identification of a cannabinoid that has a high affinity for the human CB1 receptor through simulation together in python and PyMOL
- Visualized protein similarities through hallucinations using python, PyMol and knowledge in organic chemistry
- Produced a technical outline with a multidisciplinary team across Canada that organized and summarized biological findings to satisfy real world demands for potential companies to explore

Multidisciplinary Undergraduate Research Competition | *R, Statistical Methods: Hypothesis Testing*

- Analyzed and statistically compared market data of air purifiers using R in order to lower costs and increase efficiency and safety of incoming products for COVID-19
- Interpreted how ultraviolet air purifying works, specifically with TiO_2 together with multi-walled carbon nanotubes, which reduce the harmful effects of UV radiation
- Transformed our findings into digestible content by using python and matplotlib to be shared in a conference

TECHNICAL SKILLS

Languages: Python, Java, C/C++, R, MATLAB, L^AT_EX

Developer Tools: Visual Studio, IntelliJ, Git

Libraries: pandas, NumPy, matplotlib, scikit-learn

COMMUNITY ENGAGEMENT

Undergraduate Research

Sept. 2021 – Aug. 2022

Advisor: Arman Hejazi, UBC Department of Chemical and Biological Engineering

Vancouver B.C.

- Published an abstract with our findings
- Advanced my knowledge in research by understanding how to read/write technical documents and give presentations to a variety of audiences

Engineering Physics Mentor

Sept. 2023 – Present

University of British Columbia

Vancouver B.C.

- Guided 5 first-year students in Engineering Physics, providing academic support and career advice
- Developed strong leadership and teaching skills through this role

PUBLICATIONS AND CONFERENCES

Multidisciplinary Undergraduate Research Competition (MURC)

March 2022

University of British Columbia

Vancouver B.C.

- Lead a multidisciplinary team as we discovered innovations in air purification which evolved into authoring an abstract and representing our findings in a non-technical presentation

Daykin, T. D., Holzman, I. M., & Chin, S. (2022). *Development of a UV-LED based air purification system: A research study*. Undergraduate Research in Natural and Clinical Science and Technology (URN CST) Journal, 6(4), A29–A29. <https://doi.org/10.26685/urncst.375>