



Trevor Daykin

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PROFILE

My goal is to be a part of the innovative technology scene. Over the recent years I have realized how valuable it is to take initiative on tasks both personal and professional as I have lived the positive impacts it has on goals. I routinely put emphasis on being accountable and meaningful which has given me the ability to lead in competitive environments.

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

TECHNICAL PROJECTS

Autonomous 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 into reality 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>