



# Davis Toth

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## Education

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**BASc in Engineering Physics** | *The University of British Columbia* 2021 - Present

- Dean's Honour List, Men's Ultimate Frisbee Team (Captain, 2024 - Present)

## Experience

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**Physical Design Engineering Co-op** | *Microchip Technology Inc.* May 2024 – Present

- Executed place-and-route flow for multiple blocks at the 3nm technology node
  - Utilized Cadence EDA tools for physical verification, static timing analysis, etc.
  - Verified logs and report files, documenting the process for future co-ops
- Developed a QA flow for third-party IP leveraging an internal tool to run sanity checks and physical verification at multiple technology nodes
  - Created a Bash script to compile meaningful results into a single report file
  - Implemented the flow on NASA's High Performance Space Computing project
  - Documented the flow and presented it to teams in Canada and India
- Completed a design revision and tape-out, including a comprehensive audit

**Research Assistant** | *Capilano University & Hynes Group* Jan – Apr 2023

- Developed a CFD model of a data centre to analyze velocity and temperature gradients of airflow to optimize for energy efficiency
- Reconstructed the data centre in SolidWorks, including server layouts
- Wrote MATLAB code to simulate heat production of servers

## Technical Projects

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**DE0-CV FPGA Board Digital Clock** Jul – Sep 2024

- Developed 8051 assembly code to turn the DE0-CV board into a digital clock
- Displays the time in 12- and 24-hour format, the date, and includes a set mode

**Engineering Physics Virtual Robot Detective** Jan – Apr 2024

- Developed code in Python to drive a robot around a virtual gazebo course utilizing computer vision, image processing, PID control, and ROS
- Detected signs with clues and trained a neural network to read the letters

**Engineering Physics Robot Competition** May – Aug 2023

- Designed and constructed a fully autonomous robot from scratch, that followed black tape, collected objects, avoided objects with magnets, and rode a zip-line
- Designed chassis in CAD and built with laser cut hardboard and 3D printed parts
- Soldered various electrical circuits and wrote collision sensing code

## Technical Skills

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**Programming:** Python, Java, C/C++, Assembly, Bash

**EDA & CAD:** SolidWorks, OnShape, Innovus, Pegasus, Tempus

**Other Tools:** Linux, Git, Ansys Fluent, MATLAB