Davis Toth

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Education

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

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

Experience

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
  - Verified log 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 a high-profile project for NASA
  - 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

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 Python code to drive a robot around a virtual gazebo obstacle 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

Programming: Python, Java, C/C++, Assembly, Bash
EDA & CAD: SolidWorks, OnShape, Innovus, Pegasus, Tempus
Other Tools: Linux, Git, Ansys Fluent, MATLAB