Davis Toth

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Education

BASc in Engineering Physics | *The University of British Columbia* Exp. Grad. May 2026

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

Work Experience

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

- Executed place-and-route flow on multiple 3nm technology blocks using Cadence EDA tools
  - Performed physical verification and static timing analysis to ensure compliance for signoff
  - Resolved timing and DRC violations, documenting the process for future co-ops
- Developed a quality assurance flow for third-party IP leveraging an internal tool to run sanity checks and physical verification across multiple technology nodes
  - Created a Bash script to compile meaningful results into a comprehensive report
  - Implemented the QA flow on NASA's High Performance Space Computing project
  - Documented and presented the flow to teams across the company for use on future projects
- Completed a design revision, including a thorough audit to ensure accuracy prior to tape-out

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

- Developed a computational fluid dynamics model of a data centre analyzing velocity and temperature gradients of airflow to optimize for energy efficiency
- Reconstructed the data centre layout in SolidWorks, including server configurations
- Programmed MATLAB code to simulate and analyze variations in server heat production

Technical Projects

DE0-CV FPGA Board Digital Clock Jul – Sep 2024

- Developed 8051 Assembly language code to transform the DE0-CV board into a digital clock
- Implemented user interface features, including time and date setting and display toggling

Engineering Physics Virtual Robot Detective Jan – Apr 2024

- Developed Python code to navigate a robot through a virtual Gazebo course, utilizing computer vision, image processing, PID control and ROS for autonomous operation
- Trained a convolutional neural network to interpret signs with alphanumeric characters

Engineering Physics Robot Competition May – Aug 2023

- Engineered a fully autonomous robot from scratch capable of following black tape, collecting objects, avoiding objects with magnets, and traversing a zip-line
- Designed the robot chassis in CAD, constructing it with laser-cut and 3D-printed materials
- Soldered electrical circuits and developed collision detection code

Technical Skills

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