Eric Lefort

Tenstorrrent Digital Design Engineering — Computational Aerodynamics Research

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Education

2020–2025 **University of Toronto**, *BASc*, Engineering Science: Robotics Engineering, cGPA 3.82/4.0.

Experience

May 2023–Apr 2024 **Tenstorrent Inc.**, *AI Silicon Digital Design Co-op*, System-On-Chip team.
- Maintained Python script for parametric generation of top-level chip connections
  - Added support for mesh interconnect topology
- Created SystemVerilog + C API for writing C-based Network-On-Chip tests in full-chip simulation.
- Developed proficiency with SystemVerilog, C, Python, Git, Make, Linux, Synopsys VCS & Verdi

May 2022–Aug 2022 **Computational Aerodynamics Lab**, *Summer Researcher*.
University of Toronto Institute for Aerospace Studies. Supervisor: Dr. David W. Zingg
- Analyzed flow solver performance to identify avenues for improving CFD algorithms.
- Researched unconventional methods to create meshes more quickly and easily.
- Implemented finite-difference algorithms for solving partial differential equations.

Feb 2022–Aug 2022 **University of Toronto FSAE**, *Senior Member*, Aerodynamics, Manufacturing.
- Used StarCCM to run simulations and optimize parameters for aerodynamic performance
- Designed parts in Solidworks and integration with assembly for early prototyping

May 2021–Aug 2021 **Rocscience Inc**, *Software Developer*.
- Automated UI testing and creation of documentation using TestComplete and Python
- Improved scalability and automation of UI testing process using Azure DevOps

Skills

Coding Python, C/C++, MATLAB, Git, SystemVerilog, ROS, Tensorflow

Software Linux, Solidworks, Fusion360, StarCCM, LTSpice, LaTeX

Machining Metalworking (mill, lathe, drills, etc.), Laser Cutter-Engraver, 3D printer

Languages English, French

Projects

Apr 2023 **Design and training of variant chess engine using CNNs**, *Python, PyTorch, C*.
- Supervised training of a CNN model to perform chess board evaluation function
- Implementation of heuristic search for atomic chess using trained evaluation function.

Mar 2023 **Built a mobile robot with path following and obstacle avoidance**, *C++*.
- Control using Arduino Uno. Scanning ultrasonic sensor to detect obstacles and perform path-finding

Oct 2022 **Programming TurtleBot Waffle Pi robots**, *ROS, Python*.
- Implemented PID controller to follow marked paths, actuation and data collection performed using ROS 1.
- Manually implemented bayesian methods to localize robot using landmarks.

Aug 2022 **Numerical differential equation solver**, *MATLAB*.
- 2nd and 4th-order finite difference operators for spatial derivatives and linear multistep methods for time-marching.

Apr 2021 **Content-aware image resizing: seamcarving**, *C*.
- Dynamic programming to identify least important connected path of pixels to remove from an image

Achievements & Certifications

Aug 2022 **Kenneth Ward Smith Scholarship, FASE Scholarship**, *Academic Achievement*.

Nov 2021 **Machine Shop Certification**, *UofT Dept. of Mechanical and Industrial Engineering*.

Aug 2020 **AP Scholar Award**, *College Board*, Calculus BC, Physics C: Mechanics, Electricity & Magnetism.
- Awarded for the achievement of three perfect 5/5 scores on AP examinations