

# Eric Lefort

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Tenstorrent Digital Design Engineering — AI and robotics research at TUM LSY Lab

## Education

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

## Experience

May 2024– **Learning Systems and Robotics Lab**, *Research Assistant*.

Aug 2024 Technische Universität München. Supervisor: Dr. Angela Schoellig.

- Leveraged Orbbec ToF RGB-D camera for and Foundation Pose model for manipulation with Franka Emika FR3.
- Creation of [MuJoCo simulation environment](#) for learning lego manipulation with Franka Emika Panda

May 2023– **Tenstorrent Inc.**, *AI Silicon Digital Design Co-op*, System-On-Chip team.

- Developed Python tools for automatically generating chip interconnect network with mesh topology.
- Reducing test development time by 30% through new SystemVerilog API enabling C-based Network-On-Chip tests.
- Improved benchmark performance-per-area of RISC-V CPU-based data movement engine by over 50% by optimizing memory system, bus widths, CDC.

May 2022– **Computational Aerodynamics Group**, *Research Assistant*.

Aug 2022 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.

Sep 2021– **University of Toronto Formula SAE Team**, *Senior Member*, Aerodynamics, Manufacturing.

- Used StarCCM to run simulations and optimize parameters for aerodynamic performance

May 2021– **Rocscience Inc.**, *Software Developer*.

- Automated UI testing and creation of documentation using TestComplete, Python, and Azure DevOps

## Skills

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

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

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

Languages English, French

## Projects

Oct 2024 **Computer Graphics Ray Tracing**, C++.

- Accelerating ray tracing and mesh-mesh collision by factor of 100 using bounding volume hierarchies
- Rendering scene by implementing ray casting and ray tracing using Blinn-Phong shading model

Aug 2024 **Reinforcement Learning: Latent Action Representations**, Python, Pytorch, Gymnasium, Mujoco.

- Developed novel action space prior, leading to above-expert performance with a single gait cycle demonstration.
- Demonstrated a 2x improvement in sample efficiency and gait transitions over Mujoco and loco-mujoco baselines.

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.

Apr 2023 **Firmware programming of Dragon12-Plus2 Development Board**, C, Assembly.

## Achievements & Certifications

Aug 2024 **CIE International Experience Award+**, Summer Research Abroad [Robotics], Munich, \$2,500.

Aug 2022 **Kenneth Ward Smith Scholarship**, **FASE Scholarship**, Academic Achievement, \$2,111.

Aug 2020 **Faculty of Applied Science & Engineering Admission Scholarship**, Academic Achievement, \$5,000.

Aug 2020 **AP Scholar Award**, College Board, Calculus BC, Physics C: Mechanics, Electricity & Magnetism.