

Stefan de Lasa


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EDUCATION

University of Toronto, Bachelor of Applied Science & Engineering - Computer Eng. 2020-2025
Seasonal GPA: 4.0 / 4.0, Cumulative GPA: 3.86 / 4.0 (Dean's Honour List) (4 years + Co-op year)


WORK EXPERIENCE

Software Development Intern, *CentML*, Toronto, ON Sep 2023 - Aug 2024 

CentML  develops tools to make machine learning (ML) inference and deployment more affordable and efficient.

- Sole contributor of **PyTorch** model remote compilation project (**Docker**, **AWS**, **k8s**) for deployment optimization on CentML's cloud-hosted, distributed platform.
- Designed ML model compilation caching system, to reduce costs and improve user experience (**Postgres**, **S3**).
- Supported developer workflows with a local compilation server, which is hostable via public client (**Python**). 
- Developed a method to consistently hash ML models, including **LLMs** and **CNNs**.
- Added end-to-end testing support to CentML's platform. Wrote compilation server tests using this system.

Research Assistant, *James Elder, York University*, Toronto, ON May - Aug 2023

The Elder Lab  is investigating using **image semantics** (classification of objects in an image) to improve computer vision monocular **depth estimation**. This has applications in self-driving cars, robotics, and more.

- Formulated methods applying Elder's semantic-based model to enhance existing ML depth estimation solutions.
- Validated various approaches, demonstrating **~20%** accuracy improvement over previous models (**Python**).
- Awarded **Student Choice Best Presentation** at the Lassonde Undergraduate Research Conference.

Software Engineer Intern, *PointClickCare (PCC)*, Toronto, ON May - Aug 2022

PCC creates healthcare software to assist vulnerable populations with out-of-hospital care.

- Wrote front-end code to ease the editing of patient screening templates (**TypeScript**, **React**). Several internal users mentioned improved usability from my work.
- Extracted and sent user metrics to PCC's Pendo analytics and workflow improvements system.

EXTRA CURRICULARS

aUToronto, *University of Toronto Self-Driving Car Team*, Toronto, ON Sep 2023 - May 2024

The aUToronto planning team develops navigation algorithms for autonomous vehicles.

- Implemented method (**C++**, **ROS2**) to find the fastest route to the nearest empty parking spot.
- Proposed and implemented a technique to reduce map density, improving planning performance **>20%**.

SELECTED PROJECTS

Programmable Compass, Apr 2023 

Built a compass that points to a programmable location. Used a **STM32 Microcontroller** connected to a GPS module via **USART** and **DMA**, to a Magnetometer via **I2C**, and to a LED ring display via **PWM**.

Radio Transceiver, *Hardware Design (ECE295)* Jan 2022 - Apr 2022 

Designed, built, and tested 2 radio transceiver components. Used **Altium** and **Multisim** to design a limiter, filter, mixer and amplifier. Presented the team's results to both technical and non-technical audiences.

OS161, *Operating Systems (ECE344)* Jan 2023 - Apr 2023 

Built upon the OS161 operating systems by implementing **memory management** (page reclamation, swapping, demand paging), **system calls** (waitpid, fork, exec) and **synchronization basics** (locks, condition variables).

SKILLS

Programming: Python, PyTorch, C, C++, MATLAB, JavaScript, TypeScript, React, ARM Assembly

Dev Tools: Git, VSCode, Docker, AWS, K8S, SQL, Jenkins

OTHER

Citizenship: Canadian and American

Languages: English (Native Proficiency), French (Native Proficiency), Polish (Beginner)