# Stefan de Lasa

destefy | stefandelasa | stefan.delasa@gmail.com | 647-920-8916

## 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 the remote compilation project, delivering distributed compilation of **Pytorch** ML models.
- Created cloud-hosted infrastructure and software (**Python**) for a **Kubernetes**/**Docker** based remote compiler.
- Enabled users to host their own compilation server via a public **Python** client. Please click here to see it.
- Developed a method to uniquely and consistently hash ML models, including **LLMs** and **CNNs**.
- Built a caching system for compiled and uncompiled models using a **PostgreSQL** database and **AWS' S3**.
- Wrote end-to-end tests to ensure the compilation server was correctly integrated into CentML's platform.

**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 **depth estimation**. This has applications in fields like self-driving cars and robotics.

- Formulated methods to use Elder's semantic-based model to enhance existing ML depth estimation models.
- Demonstrated a **23% improvement** in my proof-of-concept implementation of these methods (using **Python**).
- Awarded the Student Choice **Best Presentation** award 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 (using **Typescript** and **React**). Several internal users mentioned improved usability from my work.
- Extracted user metrics and sent them to PCC's Pendo system to collect analytics for workflow improvements.

## Extra Curriculars

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

Within UofT's self-driving car team, the planning team finds optimal paths to guide the car to it's destination.

- Implemented parking (in **C++**) to dynamically find the nearest empty parking spot and the fastest route to it.
- Proposed and implemented a feature to reduce planning map density, improving performance by near **20%**.

## Selected Projects

**Programmable Compass,** *Computer Hardware (ECE342)* **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 Magnetonomer via **I2C**, and to a LED ring display via **PWM**.

**ML Model for Circuit Identification,** *Intro to Deep Learning (APS360)* **Jan 2023 - Apr 2023**

Created a **Convolutional Autoencoder Machine Learning Model** using **Pytorch** to segment drawings of circuits into different modules. Achieved a **45% accuracy**, representing a **200% increase** from the baseline.

**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.

## 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)