Stefan de Lasa

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Education

University of Toronto, Bachelor of Applied Science & Engineering - Computer Engineering 2020-2025
Seasonal GPA: 4.0 / 4.0, Cumulative GPA: 3.81 / 4.0 (Dean's Honour List)

Work Experience

Software Development Intern, *CentML,* Toronto, ON **Sept 2023 - Present**

CentML is creating tools to make machine learning (ML) training and inference more affordable and efficient.

- Used the **Python FastAPI** library to create a compilation server for users to compile ML models remotely.
- Communicated with a **PostgreSQL** database and **AWS' S3** to upload user submitted models.
- Worked to hash and serialize various ML models, including **LLMs** and **CNN** based models.

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

Prof. James Elder **computer vision** lab is investigating the relationship between **image semantics** (classification of objects in an image) and computer **depth estimation**. His team aims to build a geometry and semantic based model to see to what extent depth estimation can be turned into an image segmentation problem.

- Formulated various methods to use our model to scale/enhance existing **Deep Learning** depth estimation models.
- Used **Python** to implement these methods, demonstrating a near **50% improvement** across metrics.
- 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.

- Used **React** and **Typescript** in **Docker** environments to ease editing of patient screening templates. Several internal users mentioned improved usability from my work.
- Migrated the US "Care Insights" application to Canadian markets. Configured a back-end **Spring Boot** controller to determine session permissions via API calls.
- Extracted user metrics and sent them to PCC's Pendo system to collect analytics for workflow improvements.
- Wrote service and unit level tests in **Cypress** and **Kotlin** to ensure UI and data pipeline integrity.

Extra Curriculars

aUToronto, *University of Toronto Self-Driving Car Team,* Toronto, ON **Sept 2023 - Present**

Within UofT's student-led self-driving car team, I work on the planning team. We write software (in **C++**) to calculate the best path for the car to avoid obstacles and get to our destination efficiently.

- Implemented parking to dynamically find the nearest empty parking spot and find the fastest route to it.
- Improved planning performance by around **20%** with a feature that reduced the planning map density.

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, C, C++, MATLAB, Javascript, Typescript, React, ARM Assembly
Dev Tools:	Git, VSCode, Docker, AWS, PostgreSQL, Conda, Jenkins, Cypress
Hardware Design:	Verilog, Multisim, ModelSim, Altium, Typhoon

Other

Citizenship:	Canadian and American
Languages:	English (Native Proficiency), French (Native Proficiency), Polish (Beginner)