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, Cummulative GPA: 3.86/4.0 (Dean's Honour List)
Relevant Courses: Algorithms & Data Structures (ECE345), Matrix Algebra & Optimization (ECE367), Computer Networks (ECE361), Controls (ECE311), Fundamentals of Deep Learning (APS360), Operating Sys. (ECE344).

Skills

Programming:	Python, C, C++, MATLAB, Javascript, Typescript, React, ARM Assembly
Dev Tools:	Git, VSCode, Docker, Conda, IntelliJ, Jira, Bitbucket, Jenkins, Cypress
Hardware Design:	Verilog, Multisim, ModelSim, Altium, Typhoon

Work Experience

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 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 and evaluate these methods, demonstrating a near **50% improvement** in 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.
- Used **Agile development** to organize and execute **Scrum** team (10 people) commitments.

Data Management Intern, *Independent Electricity System Operator (IESO),* Toronto, ON **Jun - Aug 2021**

As the Crown corporation responsible for operating/directing the electricity market in Ontario, the IESO gathers and monitors data from industrial customers throughout the province.

- Prepared presentation to highlight uses of **machine learning** to improve existing processes.
- Recommended **supervised learning** for anomaly detection, using IESO's historical datasets.
- Worked with peers to review Meter Service Provider data, for meter billing report correctness.

Selected Projects

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).

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.

Other

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