

# Name Surname

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## Education

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### IT Programming for Artificial Intelligence

Nova Scotia Community College (Halifax, Nova Scotia)

January 2022 - Present

### Bachelor of Computer Science

Saint Mary's University (Halifax, Nova Scotia)

July 2017 – July 2021

## SKILLS

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**Hard Skills** Machine Learning, Deep Learning, Computer Vision, Natural Language Processing, Data Mining, Data Visualization, Probability

**Frameworks** PyTorch, Django, Flask, React, TensorFlow, Keras, NumPy, Pandas, Matplotlib, Scikit-Learn, Tensorflow

**Programming** C++, Java, Python, Matlab, R, SQL, JavaScript

## WORK EXPERIENCE

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### Atlantis Institute of Technology | Research Assistant

Location-Location, Location (August 2023 - Present)

- Executed real-time **semantic segmentation** tailored for uncrewed surface vehicles, specifically adapted for driving conditions in Atlantis.
- Achieved leading-edge outcomes in **image segmentation** for the Indian Driving Dataset through the application of a modified **U-Net** architecture.
- Worked alongside an international team of developers, employing the biweekly sprint **Agile methodology** for collaboration.

### High Tech Laboratory | Machine Learning Intern

Area, Country (November 2022 - June 2023)

- Created two processing streams to determine tree trunk diameter at chest height from **images**, reaching a diameter extraction accuracy of 90%.
- Contributed to the development of the inaugural dataset for semantic segmentation and **object detection** of trees, utilizing images gathered from diverse forests throughout Country.
- Researched and **developed a method** for estimating real-world distances from 2D images, achieving an average precision within  $\pm 1$  foot.

### Fake Farm Inc. | Data Scientist Intern

Yarmouth, Nova Scotia (June 2022 - August 2022)

- Engineered **Deep Learning** algorithms for categorizing multiple cattle activities, employing a joint time-frequency representation of data from Inertial Measurement Units (IMUs).
- Created spectrograms for the analysis and visualization of **time-frequency data**.
- Conducted **data cleaning**, **preprocessing**, and **exploratory data analysis** to enhance model inputs.
- Significantly **enhanced model accuracy** to 92% by utilizing the hyperparameter tuning.
- Headed a team of four developers, adopting **Agile methodology** for project management.

### Computer.io | Machine Learning Engineer Intern

Somewhere, Someplace (January 2021 - December 2021)

- Developed a recommendation engine leveraging machine learning **classifiers** and **language transformer** models to suggest stock keeping unit codes for exporting or importing commodities, covering 97 major categories and 1,244 subcategories.
- Constructed a document **classification** system employing tailored features and word vector representations, alongside a fuzzy matching system for key item extraction from documents.
- Compiled a bespoke named entity recognition dataset focused on the financial sector and trained both **probabilistic** and **transformer-based** models using this dataset.
- Engineered a comprehensive backend solution, including a **REST API** using **FastAPI**, to support a frontend application.

## Technology Corporations Inc. Ltd. LLC | Programmer Analyst Trainee

### Big City, Big Country (Jan 2021 – Dec 2021)

- Created a Covid-19 tracking web application utilizing **Java**, the **Spring** Framework, and Spring Boot within Eclipse, paired with **ReactJS** for case monitoring. This application includes a distinctive functionality that guides patients to the nearest hospital.
- Utilized **MySQL** Workbench for querying extensive data sets across numerous countries, leveraging SQL joins to manage complex data relationships.
- Worked in collaboration with diverse stakeholders to forge innovative solutions, ensuring clear communication of technical ideas and concepts.

## PROJECTS

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### Variable Rate Application of Pesticides, Nova Scotia Community College

[Github](#)

#### Advanced Software Development | November 2021 – February 2022

- Directed a three-member team in creating a software module for an Unmanned Ground Vehicle, in partnership with the Mechanical Engineering Department and the Robotics team.
- Developed a model for **classifying plants** by infection severity and established a process to calculate the necessary quantity of pesticide to apply.
- Implemented the model on Google Cloud Platform and integrated the driver code into a **Flutter** app for real-time analysis using an ESP-32 (Wifi) Camera.

### MLOps Pipeline (CI/CD), Saint Mary's University

[Github](#)

#### Advanced Topics in MLOps | September 2021 – November 2021

- Designed and executed a comprehensive **MLOps** workflow pipeline that streamlined model retraining, enabled real-time metric alerts, and facilitated deployment to **serverless** endpoints on Amazon **SageMaker**.
- Enhanced the machine learning process with a web application that provides easy-to-understand visualizations of the model's training history and allows for straightforward model **inference**, promoting an efficient and automated workflow.
- **Technologies employed** include SageMaker, Lambda, API Gateway, Elastic Container Registry (ECR), EventBridge, Simple Notification Service (SNS), Simple Storage Service (S3), DynamoDB, Elastic Compute Cloud (EC2), and CloudFormation.

### Storm Damage Prediction Model

[Github](#)

#### Personal Project | Jun 2022 – Apr 2023

- Engineered machine learning models leveraging **Random Forest** and **Artificial Neural Network** techniques in Python to forecast power outages in Nova Scotia caused by severe weather, achieving a prediction accuracy of 95%.
- Additionally, developed an **executable application** that was successfully tested during the storm on January 26, 2023, demonstrating an error margin of less than 1%.

## CERTIFICATIONS

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2022 **Machine Learning Basics**, Ivy League University, Coursera

2021 **Deep Learning Course**, Andrew Ng, Udemy

2021 **Data Science Mastery**, Data Institute Website

2020 **Machine Learning with Python**, IBM Online School