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EDUCATION

University of Toronto, MAsc, Mechanical & Industrial Engineering

EXPECTED AUGUST 2025

- **Thesis** related to automation of lung metastasis treatment plans at Princess Margaret Hospital using deep learning & ML

University of Waterloo, BASc, Systems Design Engineering

SEPT 2018 - APRIL 2023

- **Relevant Coursework**: Pattern Recognition, Intro. Machine Learning, Intro. Deep Learning, Computational Neuroscience

EXPERIENCE

Artificial Intelligence Developer | *Advanced Micro Devices*

MAY. 2022 - AUG. 2022

- Optimized DL models for **accelerated inference** (throughput / latency) on AMD CPUs utilizing **pruning** and **quantization**
- Built **BERT** pipeline for sentiment analysis, trained with **Few-Shot** techniques, with **80%** faster predictions for users
- Leveraged AMD ZenDNN library to increase performance of **computer vision**, **NLP**, and **recommender** models

Deep Learning Developer | *DarwinAI*

SEPT. 2021 - DEC. 2021

- Delivered medical classification model to **Pfizer** team which reduced examination time by **40%** for medical practitioners, utilizing **PyTorch CNN** and custom data augmentations to produce highly sensitive and accurate model
- Communicated closely with customers in **manufacturing** and **healthcare** to curate custom deep learning solutions
- Optimized **YOLOv4** computer vision pipeline with **CUDA GPU optimization** (prefetch, parallel processing, cache)

Deep Learning Developer | *Applied Brain Research*

JAN. 2021 - APRIL 2021

- Developed end-to-end pipeline for **drone object-detection** model to identify surface defects on complex structures
- Built **Unreal Engine 4** simulation for data generation mitigating shortage of real-world data, paired with **OpenCV** masking
- Achieved **94%** accuracy using **RCNN** to process video frames tracking **temporal data** with **LSTM** and **LMU** architecture

Other Backend Developer @ Baron Biosystems (May 2020) - Manipulated data models with MongoDB + PHP
Android Developer @ reebee Inc. (Sept 2019) - End-to-end feature deployment on android app.
QA Developer @ SAP Canada (Jan 2019) - Built automated regression test-suite for web app.

RESEARCH

Robot Grasp Detection | *URA* | *UW Vision and Image Processing Lab*

OCT 2021 - MAY 2022

- Research design of ML model utilizing PointCloud 3D dataset from LiDAR cameras to learn **optimal grasping points**
- Implementation to be utilized in a robotic arm to quickly analyze objects and decide how to them pick up, developing **Grasp Proposition Network** and **data loader** as a customized architecture within model

Aging In Place | *URA* | *UW Vision and Image Processing Lab*

JAN 2023 - PRESENT

- Built nutrition model to classify food and provide its' nutritional content, with **NVIDIA Omniverse** dataset synthesis

PROJECTS

AutoDiffentiation Deep Learning Library | *SYDE 599*

OCT 2022

- Developed custom autodifferentiation package for Python based on Numpy, capable of being imported into any file and perform gradient descent on given neural network, functioning as a PyTorch alternative with similar functionality

Other Kaggle Titanic ML Competition - Placed in top 10% of submissions with Keras NN
Nailed-It - Placed 2nd at UofT HackXPlore for development of AI-powered tool for early-diagnosis of oxygen-deprivation illnesses through analysis nails
Toronto Housing Price Estimator - Developed Lasso ML model to predict Toronto housing prices within 5%