

YAWAR ASHRAF

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Education

University of Toronto

Sep. 2019 – May 2024

Bachelor of Applied Science in Engineering Science

Toronto, Ontario

- Major in Machine Intelligence, Minor in Robotics
- **Dean's List** (2021) and **Bronze & Silver-T** recipient for excellence as a 5-year **Squash Varsity Student Athlete**

Experience

AMD

Markham, Ontario

Software Automation Engineer Intern

May 2022 – Apr. 2023

- Designed and Developed multiple **memory, bandwidth and power measurement** analysis cross functional tools with a detailed user interface to reduce processing time by **40%-symbol** and saved over **4+** hours for our team.
- Setup and executed stressful memory tests via Linux and Windows and performed careful **GDDR6** chip tuning from multiple memory vendors based on a deep analysis of characterization results.
- Conducted an internal study on GDDR6 memory devices using an oscilloscope, performing **Spread Spectrum** and **Jitter analysis**, which informed design considerations for GDDR7
- Developed Deep Learning models to optimize memory performance and streamline the validation test suite by **8%**.

Typebrite Inc.

Oakville, Ontario

Lead Software Engineer and Co-Founder

Feb. 2023 – Present

- Typebrite is a SaaS solution that integrates **API documentation** into git styled developer workflows with post processing via **LLMs** to create a cohesive and semi-automated documentation bank.

Networks Lab @ UofT

Toronto, Ontario

Software IoT Research Intern

May 2021 – Aug. 2021

- Received a **2021 NSERC award** for Summer Research. Built and deployed data pipelines for real-time decision support, leveraging Google **Cloud IoT** and **Firestore** for the backend.
- Helped developed CottonCandy, a scalable LoRa-based mesh network solution supporting **100+** nodes across hundreds of square kilometers, achieving **>90%** packet delivery through collision-mitigation algorithms.

aUToronto

Toronto, Ontario

Software Engineer, Deep Learning Acceleration Team

Jan. 2021 – Apr. 2022

- Designed a noise modeling solution for car cameras, improving accuracy by **21%** by generating realistic noise for a **Denosing Convolutional Network (DnCNN)** using a **Generative Adversarial Network (GAN)**.

Content Turbine

Toronto, Ontario

Software Engineer (Part time)

Feb. 2021 – Sep. 2021

- Developed an **ETL** framework, for multiple clients, compatible with multiple database platforms, including **MySQL**, **PostgreSQL**, **Snowflake**, and **BigQuery**, improving data integration processes.
- Led full-stack development for client projects by utilizing technologies like **Flask** for back-end services and **React** for front-end interfaces.

Research / Projects

Multi-Robot Coordination for Urban Search for Missing Person Thesis | Paper

September 2023

- This research focuses on using a decentralized market-based **task allocation** algorithm to optimize trajectory planning for a heterogeneous Multi-Robot System while leveraging a dynamic probabilistic model advanced data structures.

Sentiment Driven Market Forecasting AI | PyTorch, RNN, LSTM, Sci-Kit Learn, TF-IDF

April 2022

- Parsed over 1.6M tweets and implemented a NLP pipeline along with VADER sentiment results to classify tweets.
- Key indices and S&P500 data was used to augment the existing model using **LSTM** blocks in a **RNN** architecture.

Early Detection of Invasive Ductal Carcinoma | Deep CNN, TensorFlow

April 2021

- Implemented a Convolutional Neural Network architecture using an attention enhanced AlexNet architecture to parse over 500,000 Breast Histopathology images for early detection of Invasive Ductal Carcinoma (IDC).

Technical Skills

Languages: Python, Java, C++, C, MATLAB, Verilog, HTML/CSS, Postgre/SQL, ROS/2, JavaScript, .NET

Technologies/Frameworks: TensorFlow, PyTorch, JAX, Jenkins, CUDA, OpenCL, Docker, Selenium, Flask, React, AWS, Gazebo, Pybullet, Git, Linux, Excel, Kubernetes, Full-Stack Development, Power BI, Tableau