Yawar Ashraf

289-885-6099 yawar1ashraf@gmail.com linkedin.com/in/yawarashraf/ github.com/ashrafya

Education

University of Toronto **Sep. 2019 – May 2024**
BASc in Engineering Science, Major in Machine Intelligence, Minor in Robotics *Toronto, Ontario*

Experience

AMD **May 2022 – April 2023**
Memory Validation and Design Intern *Markham, Ontario*

- Setup and executed stressful memory tests and performed careful **GDDR6** chip tuning from multiple memory vendors based on a deep analysis of characterization results.
- Designed and Developed multiple **memory, bandwidth and power measurement** analysis tools that reduced processing time of key tasks by **40%-symbol** and saved over 80+ hours every month.
- Conducted an internal study on GDDR6 memory devices using an oscilloscope, performing Spread Spectrum and Jitter analysis, which informed design considerations for GDDR7

Typebrite Inc. **February 2023 – Present**
Co-Founder and Chief Technical Officer *Oakville, Ontario*

- Led multiple client engagements, successfully secured an enterprise client contract worth over **35,000 CAD** for API documentation & developer environment solutions tailored to enhance **developer workflows** & **client engagement**.
- Steered Typebrite to specialize in transforming raw APIs into engaging documentation using **Large Language Models** and git styled streamlined developer workflows and collaborative documentation generation.

Networks Lab @ UofT **May 2021 – August 2021**
Research Intern *Toronto, Ontario*

- Received a **2021 NSERC award** for Summer Research. Designed, built and tested a power-saving circuit that was designed to allow for **6-12 months** of Long Range communication with no more than 2 AA batteries.
- Contributed to the development and testing of a multi-hop self organizing **LoRa 32u4** network for surveying and collecting waterfall data across a village in Mexico to help design and install rain water collection systems.
- Designed and built outdoor electronic circuit enclosures in compliance with IP65 waterproof rating. Prepared detailed enclosure and circuit design documents for replicability and to be implemented in Mexico.

aUToronto **January 2021 – April 2022**
Software Engineer, Simulation and Deep Learning Accelaration Team *Toronto, Ontario*

- 1st Place Winner of **2022 SAE Autodrive Challenge II.**
- Engineered a noise modeling technique to enhance the car's camera functionality, enabling accurate mapping from noisy to clean images via a **Denoising Convolutional Neural Network (DnCNN)**.
- Addressed the extensive data requirement for training the **DnCNN** by custom-building a **Generative Adversarial Network (GAN)**, which successfully generated real-world noise models, markedly improving the performance.

Projects & Research

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.

Motion Planning for Autonomous Vehicles | *CARLA, SciPy, OpenCV* **November 2021**

- Developed autonomous vehicle stack that includes state estimation, localization, visual perception and motion planning.
- Implemented a hierarchical motion planner to navigate through real world scenarios modeled in the CARLA Simulator.

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 parsed over 500,000 Breast Histopathology images for early detection of Invasive Ductal Carcinoma (IDC).

Extracurricular & Certifications

- **Squash Athlete**: Part of UofT Varsity team for 5 years; Received **Bronze-T award** for exceptional athletic performance; Highest Canadian **Men's Under 23 Ranking of 38**.
- **Self-Driving Car Specialization**: Completed the 4-course *Coursera* Specialization offered by UofT.

Technical Skills

Languages: Python, C, C++, MATLAB, Verilog, HTML/CSS, PostgreSQL, ROS, Java, JavaScript, .NET
Technologies/Frameworks: Spring Framework, JAX, Jenkins, Microsoft Azure, Docker, Selenium, Flask, React, AWS