Yawar Ashraf

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Education

Queen's University **Sep. 2025 – Aug 2026**
MEng in Electrical and Computer Engineering *Kingston, Ontario*

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

Experience

University of Toronto **Toronto, ON**
Research Assistant | Paper *May. 2023 – Apr 2024*

- Implemented decentralized market-based task allocation algorithm optimizing Multi-Robot System trajectory planning for urban search missions; leveraged K-Nearest Neighbors clustering and probabilistic lost person models at CIMLab

Research Assistant *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 **Firebase** for the backend supervised by Professor Liebeherr.
- 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.

AMD **Markham, ON**
Software Engineer Intern *May 2022 – Apr. 2023*

- Developed Python-based test automation pipeline and orchestrator for Windows/Linux environments, enabling automated Characterization and Qualification test suites.
- Designed IC memory, bandwidth and power measurement analysis tools with detailed UI, reducing processing time by 40% and saving 4+ hours per team member.
- Executed stress tests and performed GDDR6 chip tuning across multiple vendors; developed Deep Learning models to optimize memory performance and streamline validation by 8%.

Typebrite **Oakville, ON**
Co-Founder *Feb. 2023 – Jan. 2025*

- 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.

aUToronto **Toronto, ON**
Software Engineer *Jan. 2021 – Sep. 2022*

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

Content Turbine **Toronto, ON**
Software Engineer Freelancer *Feb. 2021 – Sep. 2021*

- Led full-stack development for client projects by utilizing technologies like **Flask** for back-end services and **React** for front-end interfaces.
- Built NoSQL database & caching modules for Play!, Vert.x, & JHipster frameworks in **Java** using **Singleton** and **Dependency Injection (DI)** design patterns, with Guice and JUnit unit testing and ASCIIDOC documentation

Research / Projects

RecycleRight: Deep Learning Waste Sorting System | *Paper*

- Built end-to-end waste classification pipeline using CNNs and transfer learning; implemented data augmentation and ensemble methods to achieve robust performance across diverse waste categories.

Blood Clot Detection in Brain Stroke Imaging | *Paper*

- Implemented AMI-Net deep CNN architecture for mCTA stroke detection leveraging MobileNetV2 transfer learning with weighted cross-entropy loss functions; achieved 87% F1 score with real-time inference (<10s) across multi-class predictions.

Technical Skills

Languages: Python, Java, JavaScript, C/C++, PHP/Hack, HTML/CSS, YAML, PostgreSQL, MATLAB
Technologies: PyTorch, JAX, Numpy, Pandas, Scikit Learn, Matplotlib, Spring Boot, React, Node, Flask, Django