Ahmed Rosanally

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Education

University of Toronto — Toronto, Ontario

Bachelor of Engineering Science, Specialization in Machine Learning — *Sept. 2016 – May 2022*

- Undergraduate thesis: Machine Learning Accelerated Power Flow Calculation with Professor Zeb Tate
- Leverage the Graph Neural Solver and Graph Neural Networks methods for predicting the convergence of the power flow problem

Experience

Software Engineer — Solutions & Systems Integration — Jan. 2023 – Present

MDA Space | Python, PyQt, pytest, CAN, Linux, Docker — *Montreal, QC*

- Designed and implemented software interfaces used to test and validate satellite flight systems across multiple spacecraft programs
- Led the architecture and development of a reusable satellite emulator platform, now used by external partners to simulate satellite bus behavior and test flight code
- Implemented and maintained payload emulator subsystems adopted by Rocket Lab to support satellite bus development and system validation
- Designed and deployed a secure private network between partner organizations to enable remote software updates and emulator integration
- Collaborated with cross-functional teams to translate system requirements into testable, production-ready software components

Machine Learning Researcher — Sept. 2020 – May 2022

University of Toronto | Python, TensorFlow, Bash — *Toronto, ON*

- Designed and trained neural network architectures (1D CNNs, Graph Neural Networks) to model and accelerate power flow simulations
- Leveraged distributed compute clusters to optimize training workflows and reduce experiment iteration time
- Translated complex research problems into reproducible ML pipelines and evaluation frameworks
- Produced insights into system convergence behavior by analyzing model performance during training

Projects

APPrenctice | *Python, Flask, React, ElasticSearch, Docker* — Sept. 2021 – Dec. 2021

- Built a full-stack web application with Flask (REST API) and React to support dynamic application workflows
- Focused on front-end architecture, UI/UX troubleshooting, and system visualization
- Presented system architecture and interaction flows using Figma APPrentice Dynamic Architecture View using Figma

Multi-label Instrument Classifier | *Git, PyTorch, sklearn* — May 2021 – Sept. 2021

- Architected, implemented and trained 1D CNNs to predict multiple instruments playing in an audio sample
- Collaborated with peers and researchers in the field to suggest architecture improvements to achieve better model accuracy on the test set (best accuracy reached: 70.66 %)

Technical Skills

Core Languages: Python (advanced), C/C++ (experienced), SQL (Postgres) (experienced), Rust (familiar)
Systems & Backend Tools & Collaboration: Git, Docker, Antigravity, JIRA, Confluence, VS Code, Figma, Photoshop
ML & Data: PyTorch, TensorFlow, NumPy, pandas, scikit-learn

Other Skills

Languages: English (Native), French (Native), Arabic (Intermediate)
Hobbies: Reading (guidance books), Fitness (calisthenics), Music/Guitar (jazz, classic)