

Hind Mukhtar, MAsc, P.Eng

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Profile

I am a data scientist with a background in electrical engineering and a strong passion for applying AI to real-world challenges. I'm passionate about bridging the gap between research and industry, leveraging AI to drive innovation.

Work experience

01/2023 — PRESENT OTTAWA, CANADA

Data Scientist Satcom Direct

- Led full-cycle data science projects, setting objectives, defining timelines, and delivering actionable insights
- Led AI initiatives, introducing machine learning models that optimized aviation network performance and enhanced predictive analytics for business-critical decision-making.
- Mentored junior data scientists, providing guidance on best practices, model development, and cloud infrastructure, fostering a data-driven culture within the team.
- Designed and deployed real-time monitoring pipelines for live metrics, improving anomaly detection and proactive issue resolution.
- Architected cloud-based solutions on Azure, utilizing Azure Functions, Durable Functions, and Blob Storage Containers to scale predictive modeling workflows.
- Integrated Prefect for orchestration, improving model deployment efficiency. Used Prefect to automate workflows, build pipelines between different interfaces, and schedule automated emails, dashboards, and reports.
- Developed automated reporting dashboards to provide actionable insights to business stakeholders, integrating data from multiple sources.
- Partnered with engineering teams to productionize AI models, ensuring scalability, robustness, and compliance with industry standards.

06/2019 — 01/2023 OTTAWA, CANADA

Hardware Design Engineer Satcom Direct

- Led the design of a multi-layered RF circuit board in an avionic satellite communication system
- Simulated and Developed RF circuits using Advanced Design System (ADS), specializing in RF parameter tuning
- Designed multi-layered printed circuit boards using Altium Designer
- Developed and implemented comprehensive test plans for RF systems. Automated testing using Python and LabView.
- Collaborated daily with hardware, mechanical, software, and systems teams for various design projects.

05/2017 — 09/2018 OTTAWA, CANADA

Hardware Design Intern Honeywell Aerospace

- Led the hardware design verification of an RF circuit in a complex multi-processor board
- Implemented hardware modifications to improve digital and RF specifications. Automated digital testing of cards using scripting language

Work experience

- Experienced different phases of the product life cycle such as research and development, prototyping and testing, pre-qualification and production

Education

09/2021 — PRESENT OTTAWA, CANADA

Electrical and Computer Engineering | Doctorate of Philosophy University of Ottawa

09/2019 — 06/2021 OTTAWA, CANADA

Electrical and Computer Engineering | Master of Applied Science University of Ottawa

09/2014 — 06/2019 KINGSTON, CANADA

Electrical Engineering | Bachelor of Applied Science Queen's University

Skills

Python, Pytorch, Tensorflow
SQL
ETL, automation
Microsoft Azure
Power BI, Report Builder, Dash



Publications

**QoS Prediction for Satellite-Based Avionic
Communication Using Transformers**
IEEE Transactions on Machine Learning in
Communications and Networking
Under Submission

**Air Traffic and Usage Predictions in Avionic
Communications Using Attention Based VAEGAN**
2024 IEEE International Conference on Machine
Learning for Communication and Networking
<https://ieeexplore.ieee.org/document/10625144>

12/2021

**Machine Learning Enabled Localization in 5G
using LIDAR and RSS Data**
2021 IEEE Symposium on Computers and
Communications (ISCC)
<https://ieeexplore.ieee.org/document/9631433>

**Full list of publications available on Google
Scholar**
<https://scholar.google.ca/citations?user=8dFO4tsAAAAJ&hl=en>