

Hind Mukhtar, M.ASc., 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, defining objectives, timelines, and delivering actionable insights
- Developed and deployed machine learning models for forecasting, clustering, and classification, optimizing aviation network performance and predictive analytics
- Mentored junior data scientists, providing guidance on best practices, model development, and cloud infrastructure
- Designed and implemented cloud-based solutions on Azure, utilizing Azure Functions, Durable Functions, and Blob Storage Containers to scale workflows
- Integrated Prefect for orchestration, automating workflows and streamlining data pipelines across different interfaces
- Developed automated reporting dashboards, integrating data from multiple sources to provide real-time, actionable insights for business stakeholders
- Conducted statistical and probability-based risk analysis to assess uncertainty in network performance, leveraging resampling techniques to quantify variability and enhance decision-making
- Partnered with business, product, sales, and engineering teams to identify data-driven opportunities, translating business needs into AI-driven solutions that improved predictive analytics and decision-making

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
- Experienced different phases of the product life cycle such as

Work experience

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>