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OBJECTIVE

AI & Data Engineer with a Master's in Data Science and AI from the University of Ottawa. At Telecom Egypt, developed an enterprise knowledge assistant powered by a local LLM and deployed transformer-based anomaly detection for network logs. Proficient in Python, PyTorch, Hugging Face, and production data pipelines on IBM CP4D. Seeking AI/NLP roles.

PROFESSIONAL EXPERIENCE

AI & Data Engineer, Full time, Telecom Egypt (via Alkan CIT)

Nov 2024 - Present

- **Enterprise Knowledge Assistant - Local LLM (Nov 2025 - Present):** Designed the system architecture and resource plan for an enterprise assistant built on a local LLM, serving senior management and cross-domain teams; implemented retrieval across internal documents, databases, and APIs using a Chroma vector store with hybrid retrieval (BM25 + embeddings + RRF).
- **Router Configuration Standardization - Golden Image (Mar 2026 - Present):** Extracted and consolidated configuration templates from production routers into a standard golden-image configuration applicable across devices, reducing configuration faults and outages.
- **Network Log & Alarm Intelligence - SysLogs (Mar 2025 - Present):** multi-component ML project for network fault detection and root-cause analysis, processing millions of log messages ingested from Elasticsearch across network devices scaled from 5 to 12:
 - **Log Anomaly Detection - LogBERT (Mar - Aug 2025):** Adapted the open-source LogBERT transformer to telecom log data, developing the full preprocessing pipeline from scratch (Drain3 template parsing into sequential model inputs); introduced PEFT fine-tuning for incremental learning, cutting retraining time on millions of logs and supporting early anomaly detection to reduce downtime.
 - **Novel Log Detection - First-Time-Seen (Jul - Sep 2025):** Developed a mechanism that flags log messages outside the model's training distribution to identify novel fault types early.
 - **Log-Alarm Association & Co-occurrence:** Built association analyses linking logs to alarms, predicting expected logs from alarm occurrences and identifying causal log-alarm relationships within time windows, shortening root-cause identification.
- **Data pipelines & monitoring (CP4D/DataStage):** designed and automated ETL and monitoring pipelines with Python, SQL, IBM CP4D, and DataStage, ensuring data integrity across large data volumes.

Data Analysis Instructor, Part Time, MEC

Jan 2025 - Mar 2025

- Taught Python and Excel using applied business examples covering data cleaning, reporting, and analysis. Designed sessions accessible to participants from non-technical backgrounds.

Coding Instructor, Part time, iSchool

Jun 2024 - Sep 2024

- Delivered coding sessions and workshops covering data science fundamentals and application development for the DEMI program with iSchool.

AI Engineer, Internship, Wakeb Data 

Oct 2023 - Feb 2024

- Led a team in building an NLP system to detect LLM-generated text, delivered as a master's graduation project in collaboration with Wakeb Data.

- Fine-tuned transformer-based LLMs using PyTorch: BERT and RoBERTa for English, AraBERT for Arabic, and mBERT for multilingual detection.

EDUCATION

Professional Master’s in Computer Engineering Data Science and Artificial Intelligence, <i>University of Ottawa (uOttawa)</i>	Feb 2023 - Feb 2024
Intensive Code Camp Business Intelligence, <i>Information Technology Institute (ITI)</i>	Nov 2022 - Mar 2023
Bachelor’s in Computer Science and Artificial Intelligence Medical Informatics, <i>Beni Suef University (BSU)</i>	Oct 2018 - Jun 2022

SELECTED PROJECTS

Drug Reviews - NLP Sentiment Analysis & Classification Python uOttawa 	
• Developed an NLP model to predict sentiment from drug reviews and classify drug types.	
Predictive Modeling for Clinic Appointment No-Shows R uOttawa 	
• Built a machine learning model to predict patient no-shows at a patient visit medical center, improving appointment scheduling efficiency.	
Comprehensive Sales Data Analysis Power BI ITI 	
• Developed an interactive Power BI dashboard for Adventure Works Cycles e-commerce dataset.	
Students Data Integration with SSIS ETL ITI 	
• Automated comprehensive ETL processes using SSIS to optimize ITI data integration.	
Analyzing AdventureWorks Sales with SSAS & MDX ITI 	
• Employed SSAS and MDX queries to extract valuable sales insights by analyzing data from cubes and dimensions.	
Safety Induction Management System C# & SQL ITI 	
• Developed a C# desktop application with an integrated SQL database to streamline safety induction processes for managers, employees, and contractors.	

TECHNICAL SKILLS

• Programming: Python, R, C# • GenAI/LLM: RAG, vector DBs (Chroma), hybrid retrieval (BM25 + embeddings + RRF), PEFT fine-tuning, Hugging Face, MCP • Data Science & ML: Pandas, NumPy, Scikit-learn, PyTorch, TensorFlow, Keras, Streamlit • Data Engineering: SQL, ETL, Elasticsearch, Data Warehousing, IBM CP4D, DataStage, Watson Studio, PySpark, MongoDB • BI & Visualization: Power BI, Tableau, Microsoft Excel, MSBI (SSIS, SSRS, SSAS)	
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CERTIFICATIONS & SELF-STUDY

• Transformer Architecture and Attention Mechanisms, Self-study	2025
• Model Context Protocol (MCP), Self-study	2025
• Market Basket Analysis in Python, DataCamp	2025