

Anis FAKHFAKH – Data Scientist (M.A.Sc)

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PROFESSIONAL SUMMARY

Data Scientist with a M.A.Sc in IT and experience implementing data-driven solutions in multiple domains: computer vision, time-series forecasting and NLP. Expertise in translating data into actionable insights for business decision-making and communicating findings to cross-functional audiences. Passionate about designing AI solutions that drive measurable impact.

PROFESSIONAL EXPERIENCE

IT Engineer (Contract)

March 2026 – June 2026

Private real estate appraisal firm

Montréal, Québec, Canada

- Developed Python-based decision-support tools for comparable property analysis and database querying, enabling faster identification of relevant past evaluations and supporting more accurate property valuation decisions for a private broker.
- Designed automated Python and SQL pipelines to generate and pre-fill assessment reports from source documents, standardizing workflows, reducing manual data entry, and significantly shortening hours of manual report pre-filling time.

Research Assistant

May 2023 - December 2025

LIO/CRCHUM

Montréal, Québec, Canada

- Implemented a novel PyTorch deep learning framework estimating knee flexion angles from monocular RGB walking videos, achieving clinically reliable performance (MAE: 2.4°) and outperforming state-of-the-art pose estimation baselines.
- Validated the statistical significance of two architectural improvements via ablation studies: MAE reduction via feature map regularization (-8.27%) and KneeKG inpainting (-9.30%), confirmed with SPM1D over 85%+ of the gait cycle.
- Developed a KneeKG Clinical AI workflow using MMDetection, OpenCV and h5py, orchestrating data preprocessing, biomechanical annotation, model training, and evaluation across a 30-participant dataset for clinical gait analysis research.
- Adapted a repeated holdout cross-validation to reduce subject-specific overfitting and strengthen clinical model reliability.
- Communicated results to biomechanical researchers from CRCHUM and industry partners EMOVI and MOVECK.

Data Scientist

January 2022 - December 2022

Cognira

Tunis, Tunisia

- Designed and implemented modular, scalable Azure data pipelines using Databricks, in collaboration with the data engineering team, processing large-scale retail time-series data across thousands of product SKUs and categories.
- Engineered demand forecasting features (price elasticity, promotions, seasonality and calendar effects), improving unit sales forecasting by 2-5% (Weighted Absolute Percentage Error reduction) across 65% of retail product categories.
- Automated concurrent promotion campaigns lift quantification and advised clients on the recommended strategies.

R&D Deep Learning intern

April 2021 - September 2021

Lab-STICC/IMT Atlantique

Plouzané, France

- Improved the spatiotemporal reconstruction performance of a 4DVarNet model by 3.2% through adversarial learning techniques and reaching a total 9.7% improvement through additional stochastic learning components.
- Refactored the 4DVarNet framework from PyTorch to PyTorch Lightning, improving modularity and reproducibility.

Data science / NLP intern

June 2020 - August 2020

axefinance

Tunis, Tunisia

- Scraped and preprocessed a corpus of 5,000 financial news articles using BeautifulSoup and lxml for NLP analysis
- Built and deployed a Guided LDA topic modelling pipeline using Gensim and scikit-learn, achieving 0.7 topic coherence across 3 predefined financial topics and 20 seed words per topic.

SKILLS

ML & Data Science: Machine Learning and Predictive Modeling, Computer Vision, Time Series Forecasting, NLP, Feature Engineering, Statistical Analysis & Testing, Data Visualization, LLMs and Agentic AI, ETL pipelines

Engineering: Python, SQL, R, C/C++, Docker, Git, Databricks/Spark, Azure, Power BI

Practices: MLOps, Agile (Jira, Confluence), Technical documentation, Unit tests

PROJECTS

Semi-Supervised Medical Image Segmentation with Interpolation Consistency Regularization

Implemented a semi-supervised MA-Net cardiac MRI segmentation, using interpolation consistency, achieving 74.34% DSC.

International Soccer Analytics Engine

Built and validated an Elo-based soccer prediction engine (5K+ fixtures), benchmarking against the 2026 World Cup results.

Bixi AI Trip Planner

Developed an AI trip planner combining BIXI bike availability, public transit routing, and LLM reasoning agents in real time.

Pytorch personalized federated Learning framework conception and implementation (Upwork)

Built a custom federated learning approach from scratch achieving accurate predictions with low communication overhead.

EDUCATION

Master of Applied Sciences in Information Technology (Thesis-Based)

2023 – 2025

École de technologie supérieure | GPA: 4.12/4.30

Montréal, Québec, Canada

Bachelor of Engineering in Applied Mathematics and Data Science

2018 - 2021

École Nationale d'ingénieurs de Tunis

Tunis, Tunisia

LANGUAGES

ENGLISH: Professional

FRENCH: Professional