Amir Feizi

Montreal, QC | (514) 549-6006 | amir.feizi@polymtl.ca | https://www.linkedin.com/in/afeizi/

PROFILE

AI/ML Data Scientist with a Ph.D. in Computer Engineering and over 4 years of experience turning advanced analytics, statistical, and machine learning methods into measurable business impact. Skilled in KPI forecasting, predictive maintenance, model validation, credit risk modeling, sentiment analysis, and portfolio optimization, leveraging Python, PySpark, and SQL to deliver robust, explainable results. My experience spans building production-grade ML and GenAI systems—including LLMs, agentic workflows, and RAG pipelines—supported by strong MLOps practices on Azure and Databricks.

EDUCATION

Ph.D. in Computer Engineering
Université de Montréal (Polytechnique), *Montréal*, QC

- Research Focused: Resource Allocation for Device-to-Device (D2D) Communications Networks | Mathematical Modeling, Stochastic Optimization, Reinforcement Learning, and Operation Research.

M.Sc. in Electrical, Electronics and Communications Engineering
Azad University (Science & Research Branch), Tehran, IR

- Research Focused: Power Allocation and Relay Selection for Cognitive Radio Systems | Convex Optimization, Signal Processing & Machine Learning, Information Theory & Coding, Stochastic Processes, Pattern Recognitions.

SKILLS / TOOLS

- **Programming**: Python, PySpark, SQL, MATLAB, REST API Development
- **Data Science:** TensorFlow, Scikit-learn, Pandas, NumPy, XGBoost, Statmodels, SHAP, PDP, Scipy
- **Big Data:** Apache Spark, Hive, Kafka, S3, Parquet, Databricks
- **Generative AI**: NLP, LLMs, LangChain, RAG, CrewAI, LangGraph, Transformers, Prompt Eng.
- **Database**: MySQL, SQLite, PostgreSQL, SQLAlchemy
- **MLOps & CI/CD**: MLflow, AutoML, Snowflake, Docker, GitHub Actions
- **Cloud Technologies**: Databricks, Azure (Function, Blob, ML Studio)
- **Version Control & Testing**: Git, GitHub, Bitbucket, Confluence, Unittest, Pytest
- **Visualization:** Power BI, Matplotlib, Seaborn, Plotly

WORK EXPERIENCE

Data Scientist/AI Engineer January 2024 - Present
FinzzorAI, Montréal, QC

- Devised an AI-powered interactive analytical platform delivering real-time market analysis, risk-adjusted portfolio optimization, generating reports & recommendations using LLM and AI agents
- Developed advanced time-series forecasting pipelines and stochastic optimization algorithms leveraging LangGraph, signal processing principals, deep learning, and MPT optimization, achieving a back-tested annual return of 96%.
- Built a virtual assistant using LangChain, RAG, and multi-agent systems, enabling financial Q&A automation and integrated meeting scheduling through an interactive chatbot interface.
- Fine-tuned domain-specific LLMs (FinBERT/LLaMA) for financial sentiment analysis using LoRA-based parameter-efficient fine-tuning, embeddings, and supervised learning-improving classification accuracy by 18%
- Designed a modular, scalable RESTful backend system using FastAPI, managing database operations & data validation

Data Scientist May 2022 - Jan 2024
TD Insurance, Montréal, QC

- Developed several predictive models across key business KPIs to optimize contact centre operations, and built a modular, scalable forecasting framework that improved workforce optimization for handling over 5M annual calls, reducing inefficiencies by 15%
- Bulit interpretable models to predict event probabilities & quantify key business drivers under governance standards.
- Validated models using various techniques, graphs & comprehensive testing scenarios to ensure robustness.
- Proactively initiated analytical solutions, collaborated with cross-functional teams and articulated ideas clearly.

Data Scientist Research Fellow Feb. 2021 - May 2022

BusPas Inc./ Université de Montréal, Montréal, QC

- R&D on power failure detection (predictive maintenance) of IoT edge devices utilized in smart bus stations.
- Built end-to-end ML pipelines on Azure using Databricks and MLflow to improve efficiency and scalability.
- Built scalable containerized models with Docker, reducing infrastructure costs and improving model reliability.
- Automated CI/CD workflows with Azure DevOps, ensuring continuous training, deployment, and monitoring
- Developed deep learning-based models to forecast power failure and improve IoT edge device battery longevity
- Created a series of intuitive dashboards and reports using PowerBI to extract insight from telemetry sensor data, weather data and real-time public transportation data.

PROJECTS

Prescriptive Analytics and Generative AI

- Designed a CrewAI-based multi-agent system for personalized job search and ranking using vector retrieval and automated notification.
- Developed a knowledge-based Retrieval Augmented Generation (RAG) application with LangChain for interactive and intelligent querying of complicated documents on AWS Bedrock .
- Built a chatbot with history using the Amazon Titan model.
- Fine-tuning LLaMa2 model for sentiment classification push the model on Hugging Face Hub for collaboration.
- Implemented a solution using transformers to collect financial news articles and applied sentiment analysis to determine market sentiment and generate recommendations based on financial news sentiment trends.
- Built a dynamic pricing model to maximize a hotel revenue & enhance customer satisfaction | Q-learning.
- Developed a Q-learning and moving average-based algorithmic trading framework, implementing modular, reusable code, and automating processes. Continuous performance monitoring and optimization resulted in a 20% increase in trading efficiency.

Diagnostic Analytics

- Causal Inference analysis and A/B testing to evaluate the effect of a loyalty program on insurance claims.
- Developed a Marketing Mix Model (MMM) to quantitatively evaluate the effectiveness of various marketing activities on overall revenue using statistical techniques, achieving a high model accuracy with an R^2 of 0.9.
- Developed an NLP-based model for the comprehensive analysis of customer reviews.

Predictive Analytics

- Developed multiple credit risk management models to forecast corporate loan and credit card defaults using logistic regression and gradient-boosted trees, incorporating over 60 initial predictor variables:
  - Applied various methodologies, including feature selection, feature engineering, missing value imputation, outlier treatment, cross-validation, and sampling to ensure accuracy, model robustness and address class imbalance.
  - Assessed model performance through classification reports, ROC-AUC analysis, and calibration techniques.
- Created a timeseries predictive and pricing model to forecast number of bookings, resulting in a 15% revenue increase.

CERTIFICATES/ ONLINE COURCES

- Fine-Tuning with Llama 3, DataCamp 2025
- Software Engineering Principles in Python, DataCamp 2024
- End-to-End Machine Learning, DataCamp 2024
- Developing Machine Learning Models for Production, DataCamp 2024
- Amazon Bedrock - The Complete Guide to AWS Generative AI, Udemy 2024
- OpenAI Python API Bootcamp: Learn to use AI, GPT, and more! Udemy 2023
- Introduction to Git in Python, DataCamp 2024
- NLP – Natural Language Processing with Python, Udemy 2022
- Credit Risk Modeling in Python, DataCamp 2024
- Introduction to PySpark, DataCamp 2024
- Machine Learning for Finance in Python, DataCamp 2024
- Essential MLOps with Azure: Spark Moldflow & Model registry on Databricks, LinkedIn 2024
- Databases and SQL for Data Science, Coursera 2021
- Neural Network and Deep learning, Coursera 2022