Aamir M. Khan

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SUMMARY

- MLOps/ML Engineer at Definity Financial with 4 years of hands-on experience
- Specialist in GenAI/LLM with expertise in implementing and deploying end-to-end pipelines.
- Worked on diverse set of problems from underwriting, claims, and fraud analytics related to both personal and commercial insurance.
- Portfolio of important work available at aamirkhan647.github.io

WORK EXPERIENCE

Senior MLOps Engineer, Definity Financial, July 2025 – Now
Full-time Employed, Toronto – ON (Remote)

- Member of GenAI Community of Practice (CoP) defining best practices for the use of GenAI.
- Member of Solution Development Advisory Group (SDAG) defining, delivering, and ensuring best use of development procedures are applied across different teams.
- Won the "best project" and the "most innovative project" awards in the company's annual two-day CARE hackathon. Implemented AI powered Confluence search tool using Gemini, RAG using LangGraph, and Qdrant vector database.
- **Skills/Tools:** Gemini, Prompt Engineering, LangChain, LangGraph, RAGs, Qdrant, Pinecone

Intermediate MLOps Engineer, Definity Financial, July 2024 – June 2025
Full-time Employed, Toronto – ON (Remote)

- Worked as lead ML Engineer on the design and implementation of massive project to process commercial policy quotes from diverse brokers using Google GenAI services like Gemini and DocAI.
- Implemented Underwriting Inforce Scoring ML pipeline from scratch to enable flagging potential large loss policies based on an year of relevant data using Google's Vertex AI, Cloud Build, and Big Query.

  Skills/Tools: Generative AI/LLM, Gemini, Document AI, Cloud Functions, ML workflows, Leadership, Vertex AI, Cloud Build, BigQuery, Semantic Search, Vertex AI Embeddings

Advanced Analytics Professional, Definity Financial, June 2022 – June 2024
Full-time Employed, Toronto – ON (Remote)

- Part of the team implementing and deploying claims fraud flagging model specific to property fire peril. Flags top 20% suspicious claims with 24% precision. Used gradient boosting model with log-loss metric. Net annual benefits of the solution are estimated at around $450k.
- Refreshed model used to deflect suspicious policy applications in Sonnet online insurance tool. Worked on H2O (Random Forest, stacked ensemble) with AUCPR as a performance metric. As a customer-facing high-risk model, performed a detailed bias-fairness analysis comprising six demographic details.
- Worked on the massive migration of processes to the Google Cloud Platform with modifying key modules to ingest data from BigQuery, reimplementation of models in Vertex AI, and deploying end-to-end ML pipeline projects.
- Refactored the existing Usage-based Insurance (UBI) ML pipeline that provides special discounts to auto policy holders based on their driving habits and risk profile using Google's Vertex AI, Cloud Build, and Big Query.

  Skills/Tools: ML Pipelines, Leadership, Large Language Models (LLM), Generative AI, Fraud Analysis, Bias/Fairness Analysis, Cost-Benefit Analysis, Google Vertex AI, R

Data Scientist, PLC Group, Oct 2021 – May 2022
Full-time Employed, Mississauga – ON (On-site)

- Data specialist working with logs and telemetry data from a diverse set of devices installed in hundreds of communication tower sites across Canada (Bell & Rogers) and Cambodia. Worked through all phases, from data cleansing, integration, and feature selection to modeling and delivering final predictive models.
- Worked with Google Cloud Platform services (BigQuery, Data Studio, etc.), InfluxDB, time-series analysis, forecasting, anomaly detection, machine learning libraries, Python, PySpark, Scikit-learn

EDUCATION

Master of Data Science,
The University of British Columbia, Canada
Sept 2020 – June 2021, Grade: 90.4%
Relevant courses: Data Wrangling, Statistical Inference, Machine Learning, Cloud Computing, Applied Artificial Intelligence, Digital Transformation, Software Engineering, Operational Efficiency

PhD. Computer Science
University of Nice Sophia Antipolis, France
Nov 2006 – Mar 2010, Grade: Excellent
Thesis: Model-based Design for On-chip Systems: Using and Extending MARTE and IP-Xact

MS Embedded Systems
University of Nice Sophia Antipolis, France
Sept 2005 – Jul 2006, GPA (equiv.): 3.73 /4.0

BSc. Computer Information Systems Engineering
University of Engineering & Technology (UET), Pakistan
Jan 2000 – Feb 2004, GPA: 3.68 /4.0

TECHNICAL SKILLS

Modeling: Machine learning algorithms like regression, kNN, k-means, decision trees, random forest, Gradient boosting, Naïve Bayes, H2O
Languages: Python, R, Java, C++/C, Linux shell
Data Preparation: Google Dataprep
Databases: Google services like Big Query, Cloud SQL, Cloud Spanner, Bigtable
ML Packages/Services: Sklearn, Scipy, Vertex AI, BigQuery ML, Kubeflow
Visualization: Looker Studio, ggplot, Matplotlib, Shiny, Flask
Natural Language: NLTK, PyTorch, Embeddings, Transformers, BERT, RoBERTa
Generative AI: Google LLMs (Gemini, Palm), Doc AI
Communication: Pub/Sub, Dataflow
CI/CD: Google Cloud Build, Vertex AI pipelines, Bitbucket pipelines
Containerization: Docker, Kubernetes, GKE
API Integration: Flask, functions_framework
API Development: RESTful API, Postman, Swagger, Apigee

MEMBERSHIPS

Professional Engineer: Pakistan Engineering Council (Registration No.: COMP/2659)

LANGUAGE PROFICIENCY

English: IELTS (Band 8.0, CEFR-C1), listening 8.0, reading 9.0, speaking 7.5, writing 7.0
French: Level B1-Seuil, certificate from CUEF, Université Stendhal, Grenoble, France
Urdu: Native