Shayan Liaghat
(Machine Learning Data Scientist)

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Summary

· Machine Learning Data Scientist with 5+ years of experience developing and deploying advanced machine learning models and data-driven solutions. Skilled in designing innovative algorithms, optimizing model performance, and integrating solutions into production pipelines. Proficient in transforming complex data into actionable insights, streamlining workflows, and supporting strategic decision-making.

Technical Skills

· **Programming Languages**: Python (Pandas, NumPy, Scikit-Learn, PyTorch, TensorFlow, Keras, Transformers), R (data.table, dplyr), C++, SQL.

· **Machine Learning:** Deep Learning, NLP, Probabilistic Modeling, Genetic Algorithms, Markov Chains, Feature Engineering.

· **Tools & Platforms:** AWS (EC2, S3, Lambda), Azure Pipelines, Flowise, Docker, Kubernetes, Git, Flask, Streamlit, Shiny, Jupyter Notebook, LM Studio.

· **Core Skills:** Optimization, Object-Oriented Programming, Model Testing & Validation, API Design, Exploratory Data Analysis, Data Wrangling.

· **Generative AI:** LLMs, AI Agents, RAG Pipelines, Embeddings, OpenAI API, Prompt Engineering, Vector Databases.

Professional Experience

Machine Learning Data Scientist – Pinnacle Sports, Toronto, ON.   March 2021 - Present

· Designed and implemented advanced machine learning models for soccer predictions, using algorithms such as Neural Networks, Random Forest, and Polynomial Regression to automate trading applications in the sports betting domain.

· Developed an innovative modeling technique combining Genetic Algorithms with Markov Chains, optimizing a custom ensemble loss function.

· Translated R-based models into C++, improved execution speed by 250x, enabling real-time production deployment of computationally intensive models.

· Built, optimized, and maintained internal machine learning libraries, ensuring adherence to best software engineering practices to enhance performance and scalability, as well as deploying models and pipelines into production stacks.

· Integrated production data into training pipelines enabling the models to adapt and capture the most updated customer betting behaviors.

Machine Learning Engineer – Foresight Insurance Analytics Inc., Toronto, ON. (part-time)   April 2022 - December 2022

· Developed and deployed lightweight convolutional neural network (CNN) models optimized for edge devices, such as dash cams and edge cameras, for real-time object detection tasks achieving high accuracy with minimal latency.

· Designed and implemented models for detecting stop signs, red lights, and road lane markings to evaluate and score driving behavior.

· Designed and applied advanced data augmentation pipelines to enhance model robustness and improve generalization across varied driving scenarios.

· Streamlined training data preparation through data cleaning and preprocessing, ensuring high-quality input for model development.

Data Scientist – Branchy, Toronto, ON. (part-time)   August 2020 – January 2021

· Built a full-stack e-commerce web application to analyze customer reviews, helping businesses identify cost-saving opportunities and boost revenue.

· Implemented sentiment analysis, Named Entity Recognition (NER), and Topic Modeling pipelines using NLP techniques to extract actionable insights, identify key trends, and uncover emerging market patterns for strategic decision-making.

Lead Design Engineer - National Steel Car Limited (NSC), Hamilton, ON.   April 2018 – March 2021

· Developed an ARIMA model for fuel consumption prediction using vehicle performance time-series data, enabling data-driven efficiency improvements.

· Designed an automation pipeline for inter-departmental data access and analysis, reducing manual effort and saving 10+ engineering hours weekly.

· Delivered comprehensive technical and analytical reports tailored to client requirements, ensuring alignment with stakeholder goals and expectations.

Education

Master of Applied Science - Mechanical Engineering - McMaster University, Hamilton, ON, Canada.	June 2015 - Jan 2018
Bachelor of Applied Science - Aerospace Engineering - Sharif University of Technology, Tehran, Iran.	Sep 2009 - June 2014
Diploma in Math & Physics – Allameh Helli High School, Tehran, Iran.	Sep 2006 - June 2009

Honors & Awards

· Recipient of full scholarship for M.A.Sc., and B.A.Sc.

· Recipient of International Excellence Award (IEA) (2016 & 2017).