

Homayoun (Jeremy) Gerami

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PROFILE

I am a Data Analyst/ Machine Learning Developer with extensive professional experience in energy and finance sectors. I have applied predictive and prescriptive analytics to address business requirements in various projects. I hold two MSc degrees in Data Analytics and Geophysics, and a BSc degree in Mining engineering.

Selected Accomplished Data Analytics Projects:

➤ **Equipment Downtime Prediction:**

This project was to predict downtime for a facility that produces 'Potash', preferably one hour ahead of time, to ensure operator have enough time to perform the required troubleshooting and preventing the failure. Our team was given two years of timeseries data to train and test our model, and after EDA analysis, features engineering and selection, I optimized a machine learning model, XGBoost, for the purpose of the project.

[Project Overview: Equipment Downtime Prediction](#)

➤ **Machine Learning for Option Trading:**

I have developed a method for Option Trading using Simulation, Machine Learning, and optimization. Distribution of the pricing for desired stocks are predicted for any given day in future by means of simulation. The predicted distributions are then linked to the existing option strikes, to calculate probabilities and profit/loss for trading strategies. Optimization techniques will adjust the short and long positions to maximize profit for a given strategy, and any desired probability cut-off will serve as a constraint in the optimization process (*Canadian Intellectual Property Office Patent Pending, Application No: 3,119,109*).

➤ **Credit Card Fraud Detection Using Machine Learning Algorithms:**

Statistics combined with machine learning methods can be effectively utilized for fraud detection. In this project, a comparative study of four classifiers - logistic regression, support vector machine, random forest, and K- Nearest Neighbor was performed on a publicly available dataset. This project was performed for the Computational Analytics course, during my MSc program.

[Project Overview: Credit Card Fraud Detection](#)

➤ **Covid-19's Effect on the Food Supply Chain:**

As part of the Data Visualization course project, during my Data Analytics MSc program, I and my teammates analyzed the effect of Covid-19 on the US food production output.

[Project Overview: Covid-19's Effect on the Food Supply Chain](#)

➤ **Delineating Porous Sand Geo-Bodies Over Aquistore Seismic Survey:**

This project was a CO2 storage research and demonstration project, with the aim of capturing and storing CO2 in deep porous sandstone geo-bodies. I used my domain expertise knowledge, as well as data analytics skills to identify and map the porous sandstones. The project gone through, seismic/log data conditioning, clustering, and Bayesian class definitions, implementing various optimization methods, model building and finally data visualization stages.

[Project Overview: Delineating Porous Sand Geo-Bodies](#)

PROFESSIONAL EXPERIENCE

- **Data Engineer (Sep 2021- present)**
Accelerate Financial Technologies, Calgary Canada.

My responsibilities include:

- Performing required data analytics methods for trading and generating fund facts
- Design and create insightful and interactive dashboards
- Create and maintaining databases

I am also the only developer of the 'alpharank.com', an alternative data & analytics platform.

- **Machine Learning Developer Associate (Internship), (Mar 2021- Aug 2021)**
AltaML, Calgary Canada.

During my internship, I contributed to the following tasks:

- Data Engineering and preparation for Modeling
- Creating and fine tune supervised machine learning models for prediction purpose
- Designing dashboards for highlighting models' performances

- **Senior Seismic Data Analyst (Nov 2012 – Jun 2020)**
Schlumberger Oilfield Services, Calgary, Canada.

I was responsible for numerous reservoir characterization and field development projects, prospect rankings and subsurface lithology/fluid prediction.

SKILLS:

- Professional experience in coding with Python (NumPy, Pandas, Seaborn, Scikit-learn, PyTorch and TensorFlow)
- Operational knowledge on Data Visualization packages with D3, JavaScript, Python (Matplotlib, Ggplot, NetworkX, Pyviz, Streamlit), and Tableau
- Technical competency in database management languages such as SQLite & SQL
- Working experience in cloud data & analytics web services such as AWS

EDUCATION:

- M.Sc., Data Analytics, Georgia Institute of Technology, Atlanta, U.S.A (2020 - 2021)
- M.Sc., Geophysics, Tehran University, Tehran, Iran (1998- 2001)
- B.Sc., Mining Engineering, Tehran University, Tehran, Iran (1994 - 1998)