

ZIAD SHALABY

Data Analyst | Data Scientist | Machine Learning Engineer

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Summary

Creative and results-driven Data Scientist with a solid foundation in **data analytics, machine learning, and statistical modeling**. Proven ability to **collect, clean, and interpret complex datasets** from diverse sources, creating innovative solutions to overcome data challenges and drive business decisions. Skilled in **developing and deploying machine learning models** and **automating data processes** to enhance efficiency. Experienced in building **interactive dashboards and web applications** using **Flask**, and adept at communicating technical insights to both technical and non-technical stakeholders in a clear, actionable manner. Proficient in **data visualization tools** (e.g., Tableau, Power BI), **data querying languages** (e.g., SQL), and advanced **programming in Python** for developing algorithms and integrating business requirements. Strong understanding of **statistics, multivariable calculus, and linear algebra**, combined with a passion for solving complex data problems. Currently pursuing a **bachelor's degree in computer science and data science**, with a focus on applying **advanced analytical techniques** to real-world business challenges.

Skills

Programming Languages: SQL (SQL Server, MySQL), Python (Pandas, NumPy, Matplotlib, Seaborn, Scikit-Learn, Imbalanced-learn, Java, C++)

Data Analysis Tools: Excel (Conditional Formatting, Pivot Tables, Power Query, Power Pivot)

Machine Learning & Data Science: Feature Engineering, Model Tuning, Class Imbalance Handling

Web Development & Deployment: GitHub, Flask

Database Management: SQL, Data Extraction, Data Cleaning, Data Manipulation

Problem-solving & Algorithms: Strong analytical and critical thinking skills applied to data-driven problems

Data Science Mathematics: Statistics, Calculus, and Linear Algebra

Data Visualization: Proficient in creating interactive dashboards and visual narratives using Python (Matplotlib, Seaborn).

Projects

BANK CHURN PREDICTION AND ANALYSIS – Personal Project – Alexandria, Egypt

July 2024

- Developed a machine learning model to predict customer churn using a bank dataset with various customer features such as credit score, age, and loan statuses.
- Preprocessed data by handling outliers, specifically in the 'Credit Score' column, using Isolation Forest with optimized contamination levels to retain more data and improve model performance.
- Applied Logistic Regression for classification, achieving high accuracy without using SMOTE on test data. Addressed overfitting issues through proper feature selection and scaling using PowerTransformer and RobustScaler.
- Built interactive visualizations to display churn likelihood based on key factors such as credit score, loan status, and customer age, providing actionable insights to understand patterns behind customer attrition.
- Deployed the solution as an interactive web application using Streamlit, allowing real-time churn predictions based on user input.

New York City Taxi and Limousine Project – Personal Project – Alexandria, Egypt

May 2024

- Built a regression model to predict taxi fare amounts based on various features such as trip distance, passenger count, location IDs, and more.
- Python, Pandas, NumPy, Scikit-learn for data processing and modeling. Used Jupyter Notebook for development and visualization.
- Cleaned and preprocessed a large dataset of taxi trip records.

- Implemented and tuned multiple regression models, improving accuracy by optimizing hyperparameters.
- Utilized statistical summaries to understand the distribution of key features and detect outliers.
- Achieved accurate fare predictions that could assist in optimizing ride fare estimations for ride-hailing services.

Certifications

- **Introduction to Generative AI**
Google | [2024]

Completed a course on Generative AI, covering model types (GANs, VAEs, Transformers) and applications in content creation, automation, and data generation.

Education

Alexandria University – Alexandria, Egypt

Bachelor of Science in Computer Science and Data Science

Expected Graduation: [June 2026]