

Mohammed Tarek

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Education

Cairo University

Oct 2022 - Jul 2026

Bachelor of Computer Science - Data Science, Current GPA: 3.87

Explore AI Academy

May 2023 - Aug 2024

14 Months Data Science Program

Projects

Abalone Age Prediction

Measuring Reduce time and complexity in determining abalone age using machine learning algorithms.

- Analyzed 8 features to identify relationships to the end goal.
- Fine-tuned candidate models using Hyperopt, achieving a 1.5% improvement.
- Predicted abalone age with an average error of 2 years.

Melbourne Housing Analysis and Prediction

Explored the Melbourne housing market from 2016 to 2018 to predict property prices accurately.

- Reported actionable insights to leverage market demand.
- Identified top 10% of profitable properties.
- Augmented 96% of missing spatial data using external APIs.

Fraud Detection

Developed techniques to detect fraudulent transactions early, mitigating damage.

- Solved class imbalance using a hybrid approach with 5 resampling techniques, minimizing bias.
- Implemented 4 machine learning algorithms.
- Fine-tuned models using Hyper opt, improving final model performance by 2% and base model by 33%.
- Detected 97% of the fraudulent transactions with a 2% false alarm rate.

Core Skills

- **Programming:** Python, R, Intermediate SQL (MySQL, Postgres), Basic C++, Web Scraping
- **Data Analysis:** Statistical Inference, Time Series Analysis, Dashboarding & Reporting (Power BI, Microsoft Office), Data Visualization (Seaborn, Plotly, Matplotlib, Folium)

- **Machine Learning:** EDA, NLP, Machine Learning Algorithms (Ensemble, Statistical Models), Machine Learning libraries (Sklearn, Statsmodels, imblearn)
- **Deep Learning:** Computer Vision, Text Classification & Summarization, Hugging Face. Deep Learning libraries (Pytorch mainly, TensorFlow secondary)
- **Cloud & Operations:** MLOps (Streamlit, Flask), Microsoft Azure, ETL Operations, Data Pipelines.
- **Time Series:** ARIMA modeling, State Space modeling and some signal processing, Stochastic Volatility Model.
- **Data Processing:** Data Augmentation, Data Cleaning, Dealing with Imbalanced Data.

Languages

- English (Intermediate)
- Arabic (Native)