



# SALES FORECASTING PROPOSAL

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## PROJECT OVERVIEW

The Sales Forecasting project aims to predict future sales for a retail or e-commerce business by using historical sales data. The project involves data collection, cleaning, exploration, time series forecasting model development, optimization, and deployment.

## PROBLEM STATEMENT

Businesses in Egypt's retail sector struggle to predict sales accurately due to fluctuating demand and limited analytical tools. This project aims to develop a web-based forecasting system that uses machine learning to generate accurate sales predictions and support better inventory and marketing decisions.

## PROJECT OBJECTIVES

- Develop a machine learning-based model to accurately forecast retail sales trends.
- Improve inventory and marketing decision-making through data-driven forecasting.
- Provide optimization insights for inventory, marketing campaigns, and pricing strategies.
- Develop an automated dashboard to streamline decision-making for business teams
- Provide comprehensive documentation and a presentation to stakeholders highlighting the business impact.

## Business Benefits:

- Improving sales predictability and reduce uncertainty in decision-making
- Optimize inventory and reduce stockouts.
- Improve sales planning and marketing strategies.
- Enable data-driven decision-making for the company.

## TOOLS & TECHNOLOGIES

- Python (Pandas, NumPy)
  - Jupyter Notebook
  - Matplotlib, Seaborn
  - Plotly / Dash for interactive dashboards
  - Scikit-learn
  - ARIMA / SARIMA
  - XGBoost / LightGBM
  - MLOps & Experiment Tracking:
  - MLflow
  - DVC (Data Version Control)
  - Streamlit for web deploying
  - Git & GitHub
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