

Scope of Work Document: AtliQ Bank's Credit Card Fraud Detection Project

Project Title: Credit Card Fraud Detection for AtliQ Bank

Project Description: AtliQ Bank seeks to develop a machine learning-based fraud detection system for its Gold credit card operations in India. This project will serve as the pilot phase, with future expansions to include other credit card types and countries.

Objectives:

1. Develop a supervised machine learning model to detect fraudulent transactions for **Gold credit cards** in **India**.
2. Utilize existing transaction databases to train and validate the model.
3. Prepare and analyze data through cleaning and exploratory data analysis (EDA) to inform model training.
4. Deploy the trained model to Amazon SageMaker for real-time fraud detection.
5. Create a FastAPI server for model integration and interaction.

Scope:

- **Data Collection:** Coordinate with internal teams to gather historical transaction data for Gold credit cards in India.
- **Data Preparation:** Perform necessary data cleaning to ensure quality inputs for model training.
- **Exploratory Data Analysis (EDA):** Conduct thorough EDA to uncover insights and inform feature selection for the model.
- **Model Training and Validation:** Use the sklearn library in Python to train and validate a fraud detection model.
- **Model Deployment:** Deploy the model to Amazon SageMaker, ensuring it is scalable and secure for real-time use.
- **API Development:** Develop a robust API using FastAPI to allow for easy access and integration of the fraud detection model.

Exclusions:

- The scope of this project is limited to Gold credit card transactions within India.
- Platinum credit card and transactions from other countries will be considered in subsequent phases of the project.

Deliverables:

1. A fully functional fraud detection model trained with historical data.
2. A deployed model within Amazon SageMaker environment.
3. A FastAPI server for model access and interaction.
4. Documentation covering the data pipeline, model development, and deployment strategy.

Timeline: This project is scheduled for completion within **3 months**, starting from the date of SOW approval.

Milestones:

- **Month 1:** Data collection, cleaning, and EDA completion.
- **Month 2:** Model training, validation, and initial testing.
- **Month 3:** Deployment to Amazon SageMaker and FastAPI server setup.

Approval: This SOW is subject to approval by AtliQ Bank's project management team and the data science project lead.

Signatures:

- AtliQ Bank Project Manager:
- Data Science Project Lead:

Date: