

I will collect the dataset which will have the following columns and I will use the Solution option name as target column and other as independent variables.

- Solution option name ( Target variable )
- Time taken to complete step
- Cost of transaction fee
- Cost of additional fee
- Sender's Currency
- Sender's country
- Recipient's currency
- Recipient's country
- Transaction amount

## **Model 1 ( Traditional models )**

### **XGBoost**

Pros:

High Accuracy: Captures complex relationships between features, leading to precise predictions.

Fast Predictions: Provides quick results, making it ideal for real-time applications.

Handles Missing Data: Automatically fills in missing values during training, improving model robustness.

Cons:

Requires Tuning: Difficult to find optimal hyperparameters.

Computationally Intensive: Can be resource-heavy during training, especially with large datasets.

### **Neural Networks**

Pros:

Flexible Modeling: Can handle complex, non-linear relationships between features, offering high adaptability.

Scalable: Performs better with larger datasets, allowing for improved accuracy as more data becomes available.

Cons:

Longer Training Time: Typically requires more time to train, which may not be suitable for time-sensitive tasks.

Low Interpretability: Often seen as a "black box," making it difficult to understand and explain how predictions are made.

## **Model 2 ( Large Language Models (LLMs) )**

Pros:

Versatile: Understands and processes various data types effectively.

NLP Strength: Excellent for interpreting and generating human-like text.

Leverage knowledge of financial LLMs

Cons:

Computationally Expensive: High resource usage during training and deployment.

Limited with Numbers: Less effective with structured numerical data.

## **Choosing Traditional Models Over LLMs**

Reason for Choice:

Text Data Challenges: Collecting and preparing text data for LLMs can be difficult.

Resource Intensive: Fine-tuning LLMs requires significant resources and time.

High Inference Time: LLMs have slower inference times compared to traditional models, making them less suitable for scaling.

Limitations:

Hyperparameter tuning complexity: Time-consuming and challenging, especially for non-experts, affecting performance.

Interpretability issues: Difficult to understand prediction mechanisms, reducing decision transparency.

Data drift: Traditional models can degrade when underlying data distributions change.