

## Model Optimization and Tuning Phase Report

Date	10 June 2024
Team ID	739643
Project Title	Online Payment Fraud Detection
Maximum Marks	10 Marks

### Model Optimization and Tuning Phase

The model optimization and tuning phase in online payment fraud detection involves adjusting the model's hyperparameters to improve its performance and accuracy. Here are some steps involved in this phase:

#### Hyperparameter Tuning Documentation (6 Marks):

Model	Tuned Hyperparameters	Optimal Values
Random Forest Classifier	-	-
Decision Tree Classifier	-	-

ExtraTrees classifier	-	-
Support Vector Machine Classifier	-	-

**Performance Metrics Comparison Report (2 Marks):**

Model	Optimized Metric
Xgboost Classifier	-

Random Forest Classifier	-
SupportVector Machine Classifier	-
Xgboost classifier	-

**Final Model Selection Justification (2 Marks):**

Final Model	Reasoning
Support Vector Machine Classifier	The SVM classifier was selected because it is effective in high-dimensional spaces and is robust against overfitting, especially in high-dimensional feature spaces. Additionally, it offers flexibility through the use of various kernel functions, allowing it to model complex decision boundaries. The hyperparameter tuning (C and gamma) and cross-validation ensure the model generalizes well to unseen data, providing high accuracy and reliability in predictions.