Model Optimization and Tuning Phase Template

Date	15 March 2024
Team ID	739928
Project Title	Rhythmic Revenue: Unveiling The Future Of Music Sales With Machine Learning
Maximum Marks	10 Marks

Model Optimization and Tuning Phase

The Model Optimization and Tuning Phase involves refining machine learning models for peak performance. It includes optimized model code, fine-tuning hyperparameters, comparing performance metrics, and justifying the final model selection for enhanced predictive accuracy and efficiency.

Hyperparameter Tuning Documentation (6 Marks):

Model	Tuned Hyperparameters	Optimal Values
Decision tree	-	-
Random forest regression	-	-
Linear Regression	-	-
KNN	-	-
XGBoost Regressor	-	-

Performance Metrics Comparison Report (2 Marks):

Model	Baseline Metric	Optimized Metric
Decision tree	-	-

Random forest regression	-	-
Linear Regression	-	-
KNN	-	-
XGBoost Regressor	-	-

Final Model Selection Justification (2 Marks):

Final Model	Reasoning
XGBoost Regressor	The XGBoost Regressor was selected as the final model due to its proven ability to handle intricate relationships in data. Its robust performance in predicting music sales trends, coupled with its scalability for processing large datasets, makes it an ideal choice. XGBoost's combination of accuracy and interpretability equips stakeholders with valuable insights to optimize revenue strategies effectively in the dynamic music industry.