

Model Optimization and Tuning Phase Template

Date	15 July 2024
Team ID	739668
Project Title	Octagon Oracle: Machine Learning-Powered UFC FIGHT FORECAST
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
Random Forest	n_estimators, max_depth, min_samples_split	200, 20, 2
Decision Trees	max_depth	10

Performance Metrics Comparison Report (2 Marks):

Model	Baseline Metric	Optimized Metric
Random Forest	Accuracy: 0.9923	Accuracy: 0.9923
Decision Trees	Accuracy: 0.9947	Accuracy: 0.9947

Final Model Selection Justification (2 Marks):

Final Model	Reasoning
Decision Trees	Chosen for its higher accuracy (0.9947) compared to Random Forest (0.9923) and simplicity.