Model Optimization and Tuning Phase Report

Date	08 July 2024
Team ID	739902
Project Title	FetalAI: Using Machine Learning To Predict And Monitor Fetal Health
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 :

Model	Tuned Hyperparameters	Optimal Values
Random Forest	-	-
Decision Tree	-	-
Logistic Regression	-	-
K-Nearest Neighbors	-	-

Performance Metrics Comparison Report :

Model	Optimized Metric
Random Forest	-
Decision Tree	-
Logistic Regression	-
K-Nearest Neighbors	-

Final Model Selection Justification (2 marks)

Final Model	Reasoning
Logistic Regression	The Logistic Regression model was selected for its superior performance, exhibiting accurate results during testing. Logistic regression is chosen for its simplicity, interpretability, and efficiency, making it a strong candidate for binary and multiclass classification problems. Its assumptions about linear relationships and independence of observations, combined with its ability to provide probabilistic outputs and straightforward interpretability, often make it a preferred choice.