

5 Model Optimization and Tuning Phase Template

Date	11 July 2024
Team ID	SWTID1720099206
Project Title	Anemia Sense: Leveraging Machine Learning For Precise Anemia Recognitions
Maximum Marks	10 Marks

5.1 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):

- Hyperparameter Tuning was not performed as 100% accuracy was achieved.

5.2 Performance Metrics Comparison Report (2 Marks):

	Model	Accuracy	Precision	Recall	F1-Score
0	Logistic Regression	0.991935	0.992068	0.991935	0.991937
1	Random Forest	1.000000	1.000000	1.000000	1.000000
2	Decision Tree	1.000000	1.000000	1.000000	1.000000
3	Naive Bayes	0.971774	0.972578	0.971774	0.971781
4	SVM	0.915323	0.925643	0.915323	0.915034
5	Gradient Boosting	1.000000	1.000000	1.000000	1.000000
Best model: Random Forest with accuracy: 1.0					

5.3 Final Model Selection Justification (2 Marks):

Final Model	Reasoning
Random Forest Model	<ul style="list-style-type: none"> ■ 100% accuracy ■ 100% Precision ■ 100% Recall ■ F1 -score : 1

6. Output Screenshots:

