

Model Development Phase

Date	10 July 2024
Team ID	SWTID1720078683
Project Title	Anemia Sense: Leveraging Machine Learning for Precise Anemia Recognitions
Maximum Marks	6 Marks

Model Selection Report

In the forthcoming Model Selection Report, various models will be outlined, detailing their descriptions, hyperparameters, and performance metrics, including Accuracy or F1 Score. This comprehensive report will provide insights into the chosen models and their effectiveness.

Model Selection Report:

Model	Description	Hyperparameters	Performance Metric (e.g., Accuracy, F1 Score)
Logistic Regression	Logistic regression is a statistical method for binary classification that models the probability of a binary outcome using a logistic function to constrain the output between 0 and 1.	-	Accuracy – 0.9798
Random Forest Classifier	Random Forest is an ensemble learning method that builds multiple decision trees and merges their results to improve accuracy and control over-fitting.	-	Accuracy – 1.00

Decision Tree Classifier	A decision tree is a flowchart-like structure where each internal node represents a decision based on a feature, each branch represents the outcome of the decision, and each leaf node represents a class label.	-	Accuracy – 1.00
Gaussian Naïve Bayes	Gaussian NB is a variant of the Naive Bayes classifier that assumes the features follow a Gaussian (normal) distribution, used for probabilistic classification.	-	Accuracy – 0.9516
Support Vector Machine	SVM is a supervised learning model that finds the optimal hyperplane which maximizes the margin between different classes in the feature space.	-	Accuracy – 0.9032
Gradient Boosting Classifier	Gradient Boosting is an ensemble technique that builds models sequentially, with each new model attempting to correct the errors of the previous models, using a gradient descent algorithm to minimize the loss.	-	Accuracy – 1.00

Out of all the 6 above mentioned models, we selected the Gradient Boosting Classifier Model for our project, due to the high accuracy that we got.