

Heart Disease Prediction Project Report

1. Project Workflow

1. Performed Exploratory Data Analysis (EDA) to understand feature relationships.
2. Applied feature selection based on correlation with target ($|\text{correlation}| > 0.1$).
3. Removed the target column manually from feature list.
4. Scaled data using StandardScaler for better performance.
5. Trained classifiers: Gradient Boosting, SVM, Neural Network.
6. Evaluated models using Accuracy, F1 Score, AUC-ROC, and classification reports.

2. Model Performance

Gradient Boosting Classifier:

- Accuracy: 94.63%
- F1 Score: 94.74%
- AUC-ROC: 0.983

SVM Classifier:

- Accuracy: 87.32%
- F1 Score: 87.85%
- AUC-ROC: 0.955

Neural Network Classifier:

- Accuracy: 98.05%
- F1 Score: 98.04%
- AUC-ROC: 0.986

3. ROC Curve

