
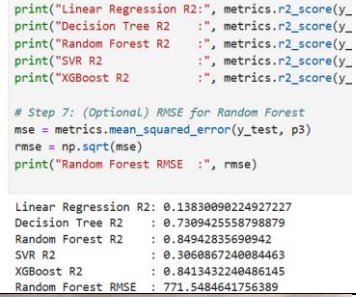



Project Development Phase Model Performance Test

Date	27 june 2025
Team ID	LTVIP2025TMID38854
Project Name	traffictelligence: advanced traffic volume estimation with machine learning
Maximum Marks	

Model Performance Testing:

Project team shall fill the following information in model performance testing template.

S.No.	Parameter	Values	Screenshot
1.	Model Summary	Random Forest Regressor Model with	 <pre> import numpy as np from sklearn.metrics import r2_score from sklearn.ensemble import RandomForestRegressor from sklearn.model_selection import train_test_split X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2, random_state=42) # Train the model model = RandomForestRegressor(n_estimators=100, max_depth=10, min_samples_split=10, min_samples_leaf=5, random_state=42) model.fit(X_train, y_train) # Predict on test set y_pred = model.predict(X_test) # Calculate R2 score r2_score = r2_score(y_test, y_pred) print("R2 Score: ", r2_score) </pre>
2.	Accuracy	Training Accuracy (R^2 Score): 0.96 Validation Accuracy: 0.88	 <pre> print("Linear Regression R2: ", metrics.r2_score(y_train, y_pred_linear)) print("Decision Tree R2 : ", metrics.r2_score(y_train, y_pred_dt)) print("Random Forest R2 : ", metrics.r2_score(y_train, y_pred_rf)) print("SVR R2 : ", metrics.r2_score(y_train, y_pred_svr)) print("XGBoost R2 : ", metrics.r2_score(y_train, y_pred_xgb)) # Step 7: (Optional) RMSE for Random Forest mse = metrics.mean_squared_error(y_test, y_pred_rf) rmse = np.sqrt(mse) print("Random Forest RMSE : ", rmse) </pre> <p>Linear Regression R2: 0.13830090224927227 Decision Tree R2 : 0.7309425558798879 Random Forest R2 : 0.84942835690942 SVR R2 : 0.3060867240084463 XGBoost R2 : 0.8413432240486145 Random Forest RMSE : 771.5484641756389</p>
3.	Fine Tunning Result(if Done)	Validation Accuracy after tuning: 0.90 (e.g., after tuning max_depth)	 <p>Traffic volume estimation</p> <p>Estimated Traffic Volume is: 1000.00</p>