

Project Development Phase Model Performance Test

Date	15 November 2022
Team ID	PNT2022TMID34839
Project Name	University Admit Eligibility Predictor
Maximum Marks	10 Marks

Model Performance Testing:

S.No.	Parameter	Values	Screenshot
1.	Metrics	Regression Model: MAE - 0.043332 MSE - 0.0037248 RMSE - 0.051031 R2 score – 0.721402	<pre> In [21]: rgr.score(X_test,y_test) Out[21]: 0.8161902534747856 In [22]: y_predict=rgr.predict(X_test) In [23]: from sklearn.metrics import mean_squared_error, r2_score,mean_absolute_error import numpy as np print('Mean Absolute Error:', mean_absolute_error(y_test, y_predict)) print('Mean Squared Error:', mean_squared_error(y_test, y_predict)) print('Root Mean Squared Error:', np.sqrt(mean_squared_error(y_test, y_predict))) Mean Absolute Error: 0.043332379983862045 Mean Squared Error: 0.0037248585608968365 Root Mean Squared Error: 0.06103161935338793 </pre>
		Classification Model: Confusion Matrix – $\begin{bmatrix} 2 & 5 \\ 0 & 53 \end{bmatrix}$ Accuracy Score- 0.91666 Classification Report – Recall Score-1.0 ROC AUC score- 0.648571	<pre> In [26]: y_pred = lr.predict(X_test) In [27]: from sklearn.metrics import accuracy_score, recall_score, roc_auc_score, confusion_matrix print('Accuracy Score:', accuracy_score(y_test, y_pred)) print('Recall Score:', recall_score(y_test, y_pred)) print('ROC AUC Score:', roc_auc_score(y_test, y_pred)) print('Confussion Matrix:\n', confusion_matrix(y_test, y_pred)) Accuracy Score: 0.9166666666666666 Recall Score: 1.0 ROC AUC Score: 0.6428571428571428 Confussion Matrix: [[2 5] [0 53]] </pre>

2.	Tune the Model	Hyperparameter Tuning - Validation Method -	<div><div><div>In [64]: scores = cross_val_score(model, X_train, y_train, scoring='r2', cv=5) scores </div><div>Out[64]: array([0.81813967, 0.77169539, 0.83989563, 0.74719974, 0.78589678])</div></div><div><div>In [65]: avg_score=scores.mean()</div><div>In [67]: print ("Cross Validation Scores : ",scores) print ("Average CV Score : ",avg_score) print ("Number of CV Scores used in Average : ",len(scores))</div><div>Cross Validation Scores : [0.81813967 0.77169539 0.83989563 0.74719974 0.78589678] Average CV Score : 0.7925654408790849 Number of CV Scores used in Average : 5</div></div></div>
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