

PERFORMANCE METRICS

Date	18 November 2022
Team ID	PNT2022TMID40873
Project Name	University Admit Eligibility Predictor
Maximum Marks	10 Marks

PERFORMANCE METRICS:

S.No.	PARAMETER	VALUES	SCREENSHOT																																																																																																																																																																		
1.	Metrics	<div>Regression Model: MAE - , MSE - , RMSE - , R2 score -</div> <div>Classification Model: Confusion Matrix - , Accuracy Score- & Classification Report -</div>	<div><div>Model Building</div><div>Gradient Boosting Regression</div><pre>In [44]: rgr = GradientBoostingRegressor() rgr.fit(X_train,y_train) Out[44]: GradientBoostingRegressor() In [45]: rgr.score(X_test,y_test) Out[45]: 0.7845693721713658 In [46]: y_predict=rgr.predict(X_test) In [47]: 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: 0.046120348671317354 Mean Squared Error: 0.004982358380692498 Root Mean Squared Error: 0.070585822882480486</pre></div> <div><div>Data Correlation</div><pre>In [11]: df.corr() Out[11]:</pre><table><thead><tr><th></th><th>GRE Score</th><th>TOEFL Score</th><th>University Rating</th><th>SOP</th><th>LOR</th><th>CGPA</th><th>Research</th><th>Chance of Admit</th></tr></thead><tbody><tr><th>GRE Score</th><td>1.000000</td><td>0.835977</td><td>0.668976</td><td>0.612831</td><td>0.557555</td><td>0.833060</td><td>0.580391</td><td>0.802610</td></tr><tr><th>TOEFL Score</th><td>0.835977</td><td>1.000000</td><td>0.695590</td><td>0.657981</td><td>0.567721</td><td>0.828417</td><td>0.489858</td><td>0.791594</td></tr><tr><th>University 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#plotting the correlation matrix as a heatmap corr_matrix = df.corr() plt.figure(figsize = (15, 12)) sns.heatmap(corr_matrix,annot=True,fmt='0.2f') plt.title("Correlation Matrix", fontsize = 20) plt.show()</pre> <div>Correlation Matrix</div> <table><thead><tr><th></th><th>GRE Score</th><th>TOEFL Score</th><th>University Rating</th><th>SOP</th><th>LOR</th><th>CGPA</th><th>Research</th><th>Chance of Admit</th></tr></thead><tbody><tr><th>GRE Score</th><td>1.00</td><td>0.84</td><td>0.67</td><td>0.61</td><td>0.56</td><td>0.83</td><td>0.58</td><td>0.80</td></tr><tr><th>TOEFL Score</th><td>0.84</td><td>1.00</td><td>0.70</td><td>0.66</td><td>0.57</td><td>0.83</td><td>0.49</td><td>0.79</td></tr><tr><th>University 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2.	Tune the Model	Hyper parameter Tuning - Validation Method -	<div><div>Logistic Regression</div><pre>In [48]: y_train = (y_train<0.5) y_test = (y_test<0.5) In [49]: from sklearn.linear_model import LogisticRegression logr = LogisticRegression(random_state=0, max_iter=1000) lr = logr.fit(X_train, y_train) y_pred = lr.predict(X_test)</pre><div>Model Evaluation</div><pre>In [50]: 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("Confusion Matrix:", confusion_matrix(y_test, y_pred)) Accuracy Score: 0.9375 Recall Score: 1.0 ROC AUC Score: 0.9333333333333333 Confusion Matrix: [[2 2] [0 7]]</pre><div>Save the Model</div><pre>In [51]: import pickle pickle.dump(lr, open("university.pkl", "wb")) model = pickle.load(open("university.pkl", "rb"))</pre></div>
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