

Project Development Phase Model Performance Test

Date	14 November 2022
Team ID	PNT2022TMID12635
Project Name	Project - Machine Learning based Vehicle Performance Analyser
Maximum Marks	10 Marks

Model Performance Testing:

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

S.No.	Parameter	Values	Screenshot
1.	Model Summary	-	 <pre> random forest regressor [99] from sklearn.ensemble import RandomForestRegressor [100] rf= RandomForestRegressor(n_estimators=10,random_state=0,criterion='mae') rf.fit(x_train,y_train) /usr/local/lib/python3.7/dist-packages/ipykernel_launcher.py:2: DataConversionWarning: A column-vector y was passed v FutureWarning: Criterion 'mae' was deprecated RandomForestRegressor(criterion='mae', n_estimators=10, random_state=0) [101] y_pred2=rf.predict(x_test) y_pred2 array([-1.22541325, 0.04145375, -1.27712211, -0.21321237, -0.73417911, 0.94635875, 1.42983656, 0.05438096, -1.08321389, 0.09057716, 1.36778593, 1.89133811, -0.52734368, 0.26380183, -0.95394175, 1.04460559, 0.58181113, 0.23406924, -0.86991486, 1.10794893, -0.97333257, 0.19140943, 0.03757558, -0.29982471, 0.86879546, -0.02318232, 1.1066562 , 1.07563089, 1.09760715, -0.87767119, -0.39677881, 1.0278002 , -0.82596233, 0.97221318, -0.18735794, -0.03610954, -0.59844336, -0.92808732, 1.28375904, -1.47103032]) </pre>

2.	Accuracy	Training Accuracy - 0.91724492094	<div data-bbox="1075 199 1798 762"><pre>ax1 = sns.distplot(dataset['mpg'], hist=False, color='r', label='Actual Value') sns.distplot(y_pred2, hist=False, color='b', label='Fitted Values' , ax=ax1) plt.title('Actual vs Fitted Values for mpg') plt.xlabel('mpg') plt.ylabel('Proportion of Cars') plt.show() plt.close()</pre><div data-bbox="1093 347 1798 400"><pre>/usr/local/lib/python3.7/dist-packages/seaborn/distributions.py:2619: FutureWarning: `distplot` is a deprecated function. warnings.warn(msg, FutureWarning) /usr/local/lib/python3.7/dist-packages/seaborn/distributions.py:2619: FutureWarning: `distplot` is a deprecated function. warnings.warn(msg, FutureWarning)</pre></div><p data-bbox="1088 632 1798 663">We can see that the fitted values are reasonably close to the actual values, since the two distributions overlap a bit. However, there is definitely some room for improvement.</p><pre>[103] from sklearn.metrics import r2_score, mean_squared_error [104] r2_score(y_test, y_pred2) 0.9172449209441422</pre></div>
----	----------	-----------------------------------	---