

Project Development Phase

Model Performance Test

Date	10 February 2026
Team ID	LTVIP2026TMIDS52600
Project Name	Introduction to Smart Sorting – Transfer Learning for Identifying Rotten Fruits and Vegetables
Maximum Marks	10 Marks

Model Performance Testing:

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

S.No.	Parameter	Values	Screenshot																														
1.	Metrics	<p>Regression Model: MAE - , MSE - , RMSE - , R2 score -</p> <p>Classification Model: Confusion Matrix: TP = 185, TN = 178 FP = 12, FN = 15</p> <p>Accuracy Score: 93.1% Precision: 92% Recall: 94% F1-Score: 93%</p>	<table border="1"> <caption>Confusion Matrix</caption> <thead> <tr> <th colspan="2" rowspan="2">True label</th> <th colspan="2">Predicted label</th> </tr> <tr> <th>Fresh</th> <th>Rotten</th> </tr> </thead> <tbody> <tr> <th rowspan="2">Fresh</th> <td>185</td> <td>12</td> </tr> <tr> <th>Rotten</th> <td>15</td> <td>178</td> </tr> </tbody> </table>	True label		Predicted label		Fresh	Rotten	Fresh	185	12	Rotten	15	178																		
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2.	Tune the Model	<p>Hyperparameter Tuning – Optimizer: Adam - Learning Rate: 0.0001 - Batch Size: 32 - Epochs: 20</p> <p>Validation Method: - 80% Training Data - 20% Validation Data - Early Stopping applied</p> <p>Validation Accuracy after tuning: 95.2</p>	<table border="1"> <caption>Training vs Validation Accuracy</caption> <thead> <tr> <th>Epochs</th> <th>Training Accuracy</th> <th>Validation Accuracy</th> </tr> </thead> <tbody> <tr><td>0</td><td>0.70</td><td>0.70</td></tr> <tr><td>2.5</td><td>0.85</td><td>0.75</td></tr> <tr><td>5.0</td><td>0.90</td><td>0.80</td></tr> <tr><td>7.5</td><td>0.92</td><td>0.85</td></tr> <tr><td>10.0</td><td>0.94</td><td>0.88</td></tr> <tr><td>12.5</td><td>0.95</td><td>0.90</td></tr> <tr><td>15.0</td><td>0.95</td><td>0.92</td></tr> <tr><td>17.5</td><td>0.95</td><td>0.94</td></tr> <tr><td>20.0</td><td>0.95</td><td>0.95</td></tr> </tbody> </table>	Epochs	Training Accuracy	Validation Accuracy	0	0.70	0.70	2.5	0.85	0.75	5.0	0.90	0.80	7.5	0.92	0.85	10.0	0.94	0.88	12.5	0.95	0.90	15.0	0.95	0.92	17.5	0.95	0.94	20.0	0.95	0.95
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