

## Project Development Phase Model Performance Test

S.No.	Parameter	Values	Screenshot																																																																	
1.	Metrics	<p><b>Classification Model:</b></p> <p>Confusion Matrix: Inserted as image (see below)</p> <p>Accuracy Score: 96.7%</p> <p>Classification Report:</p> <ul style="list-style-type: none"><li>- Precision: 0.95</li><li>- Recall: 0.96</li><li>- F1-Score: 0.955</li></ul>	<div><p>Confusion matrix</p><table><tr><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td></tr><tr><td>1</td><td>95</td><td>93</td><td>1</td><td>2</td></tr><tr><td>2</td><td>0</td><td>92</td><td>96</td><td>0</td></tr><tr><td>3</td><td>4</td><td>4</td><td>96</td><td>97</td></tr><tr><td>4</td><td>0</td><td>0</td><td>0</td><td>9</td></tr></table></div> <div><p>Classification report</p><table><tr><td></td><td>precision</td><td>recall</td><td>f1-core</td><td>support</td></tr><tr><td>0</td><td>0.95</td><td>0.98</td><td>0.96</td><td>97</td></tr><tr><td>1</td><td>0.96</td><td>0.96</td><td>0.96</td><td>97</td></tr><tr><td>2</td><td>0.96</td><td>0.93</td><td>0.95</td><td>99</td></tr><tr><td>3</td><td>0.96</td><td>0.97</td><td>0.97</td><td>99</td></tr><tr><td>4</td><td>0.96</td><td>0.99</td><td>0.97</td><td>98</td></tr><tr><td>macro avg</td><td>0.96</td><td>0.96</td><td>0.96</td><td>490</td></tr><tr><td>weighted av</td><td>0.96</td><td>0.96</td><td>0.96</td><td></td></tr></table></div> <div><p>Accuracy: 96.7%</p></div>	0	0	0	0	1	1	95	93	1	2	2	0	92	96	0	3	4	4	96	97	4	0	0	0	9		precision	recall	f1-core	support	0	0.95	0.98	0.96	97	1	0.96	0.96	0.96	97	2	0.96	0.93	0.95	99	3	0.96	0.97	0.97	99	4	0.96	0.99	0.97	98	macro avg	0.96	0.96	0.96	490	weighted av	0.96	0.96	0.96	
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2.	Tune the Model	<p><b>Hyperparameter Tuning:</b> Used GridSearchCV for tuning learning rate, dropout, and dense layer size.</p> <p><b>Validation Method:</b> Used Stratified K-Fold Cross Validation (k=5) to ensure balanced validation splits across rice classes.</p>	<pre> epoch 1/5 3s 229ms/step - loss: 0.7646 - accuracy:0.7449 - val_loss: 0.2774 - val_accuracy:0.9350  epoch 2/5 0.2574 - accuracy:0.9279 - 3s 222ms/step - loss: 0.1580 - accuracy:0.9540  epoch 3/5 0.1580 - accuracy:0.9527 - 3s 229ms/step - loss: 0.1264 - accuracy:0.9590  epoch 4/5 0.1254 - accuracy:0.9626 - 3s 225ms/step - loss: 0.1050 - accuracy:0.9680  epoch 5/5 0.1047 - accuracy:0.9690 3s 226ms/step - loss: 0.1047 - accuracy:0.9650 </pre>
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Date	19/05/2025-30/6/2025
Team ID	LTVIP2025TMID39191
Project Name	<p>GrainPalette - A Deep Learning Odyssey In Rice</p> <p>Type Classification Through Transfer Learning</p>
Maximum Marks	10 Marks

**Model Performance Testing:**

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

