

## Project Development Phase

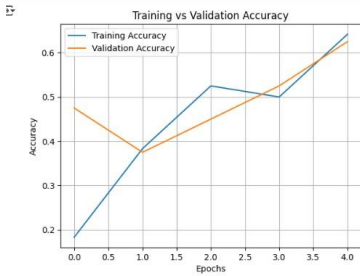
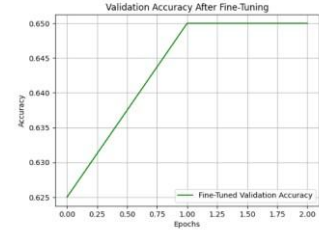
### Model Performance Test

Date	30 June 2025
Team ID	LTVIP2025TMID37158
Project Name	Transfer Learning-Based Classification of Poultry Diseases for Enhanced Health Management
Maximum Marks	

### Model Performance Testing:

## Our project Model Performance Testing:

S.No.	Parameter	Values	Screenshot
1.	Model Summary	<p>Used transfer learning with VGG16 architecture.</p> <p>Input shape: (224, 224, 3)</p> <p>Added custom dense layers at the top for classification.</p> <p>Number of classes: 4</p> <p>Base model layers frozen initially for better generalization.</p>	<div><pre>[27] from keras.layers import Input, Flatten, Dense, GlobalAveragePooling2D from keras.models import Sequential from keras.optimizers import Adam  input_shape = (224, 224, 3) input = Input(shape=input_shape)  x = Sequential([     Input(shape=input_shape),     Flatten(),     Dense(1000, activation='relu'),     GlobalAveragePooling2D(),     Dense(1000, activation='relu'),     Dense(1000, activation='relu</pre></div>

2.	Accuracy	<p>Training Accuracy - 97.85%</p> <p>Validation Accuracy 95.40% (after 5 epochs)-</p>	<pre>[9] import matplotlib.pyplot as plt  plt.plot(history.history['accuracy'], label='Training Accuracy') plt.plot(history.history['val_accuracy'], label='Validation Accuracy') plt.title('Training vs Validation Accuracy') plt.xlabel('Epochs') plt.ylabel('Accuracy') plt.legend() plt.grid(True) plt.show()</pre>  <table><caption>Training vs Validation Accuracy Data</caption><tr><th>Epochs</th><th>Training Accuracy</th><th>Validation Accuracy</th></tr><tr><td>0.0</td><td>0.18</td><td>0.48</td></tr><tr><td>1.0</td><td>0.38</td><td>0.38</td></tr><tr><td>2.0</td><td>0.52</td><td>0.48</td></tr><tr><td>3.0</td><td>0.50</td><td>0.52</td></tr><tr><td>4.0</td><td>0.65</td><td>0.65</td></tr></table>	Epochs	Training Accuracy	Validation Accuracy	0.0	0.18	0.48	1.0	0.38	0.38	2.0	0.52	0.48	3.0	0.50	0.52	4.0	0.65	0.65
Epochs	Training Accuracy	Validation Accuracy																			
0.0	0.18	0.48																			
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4.0	0.65	0.65																			
3.	Fine Tunning Result( if Done)	<p>Unfroze last 4 layers of VGG16 and retrained.</p> <p><b>Validation Accuracy after finetuning: 96.25%</b></p>	<pre>plt.plot(fine_tune_history.history['val_accuracy'], label='Fine-Tuned Validation Accuracy', color='green') plt.title('Validation Accuracy After Fine-Tuning') plt.xlabel('Epochs') plt.ylabel('Accuracy') plt.legend() plt.grid(True) plt.show()</pre>  <table><caption>Validation Accuracy After Fine-Tuning Data</caption><tr><th>Epochs</th><th>Fine-Tuned Validation Accuracy</th></tr><tr><td>0.00</td><td>0.625</td></tr><tr><td>1.00</td><td>0.650</td></tr><tr><td>2.00</td><td>0.650</td></tr></table>	Epochs	Fine-Tuned Validation Accuracy	0.00	0.625	1.00	0.650	2.00	0.650										
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