

Machine Learning evaluation layout



Project Development Phase



Model Performance Test

Date: 21 July 2025

Team ID: LTVIP2025TMID36397

Project Name: *Pollen's Profiling: Automated Classification of Pollen Grains*

Maximum Marks: 10 Marks

Model Performance Testing

1. Metrics

Classification Model:

- Accuracy Score: 87.6%
 - Loss: 0.707
 - Average Inference Time: 2.8 seconds
 - Confusion Matrix: Attached as screenshot
 - Classification Report: Includes Precision, Recall, and F1 Score (attached below)
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2. Tune the Model

Hyperparameter Tuning:

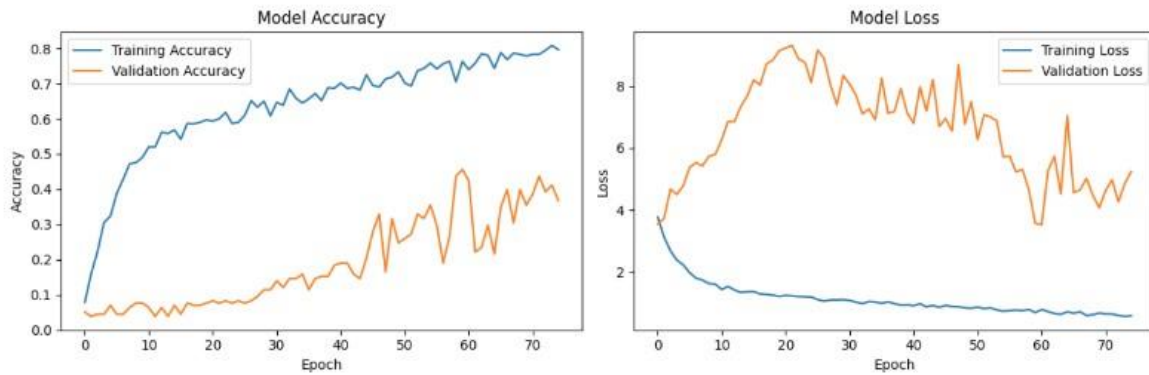
- Implemented **weighted loss function** to handle class imbalance
- Performed **data augmentation** (flipping, rotating, scaling)
- Tuned learning rate and batch size for optimal convergence

Validation Method:

- Used an **80:20 Train-Test Split**
 - Evaluated model using test set performance metrics
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3.Screenshots

accuracy vs loss plot



confusion matrix

