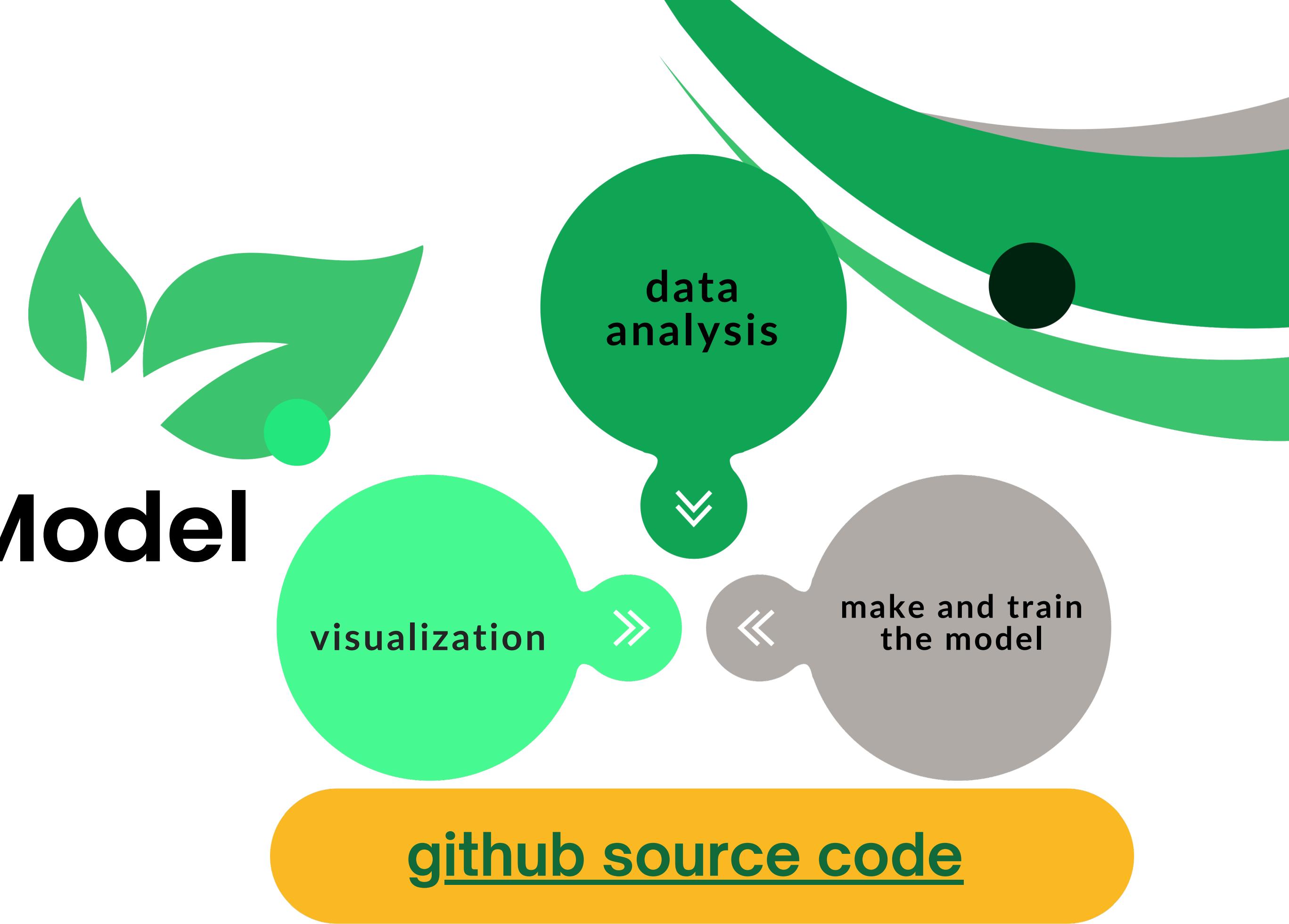
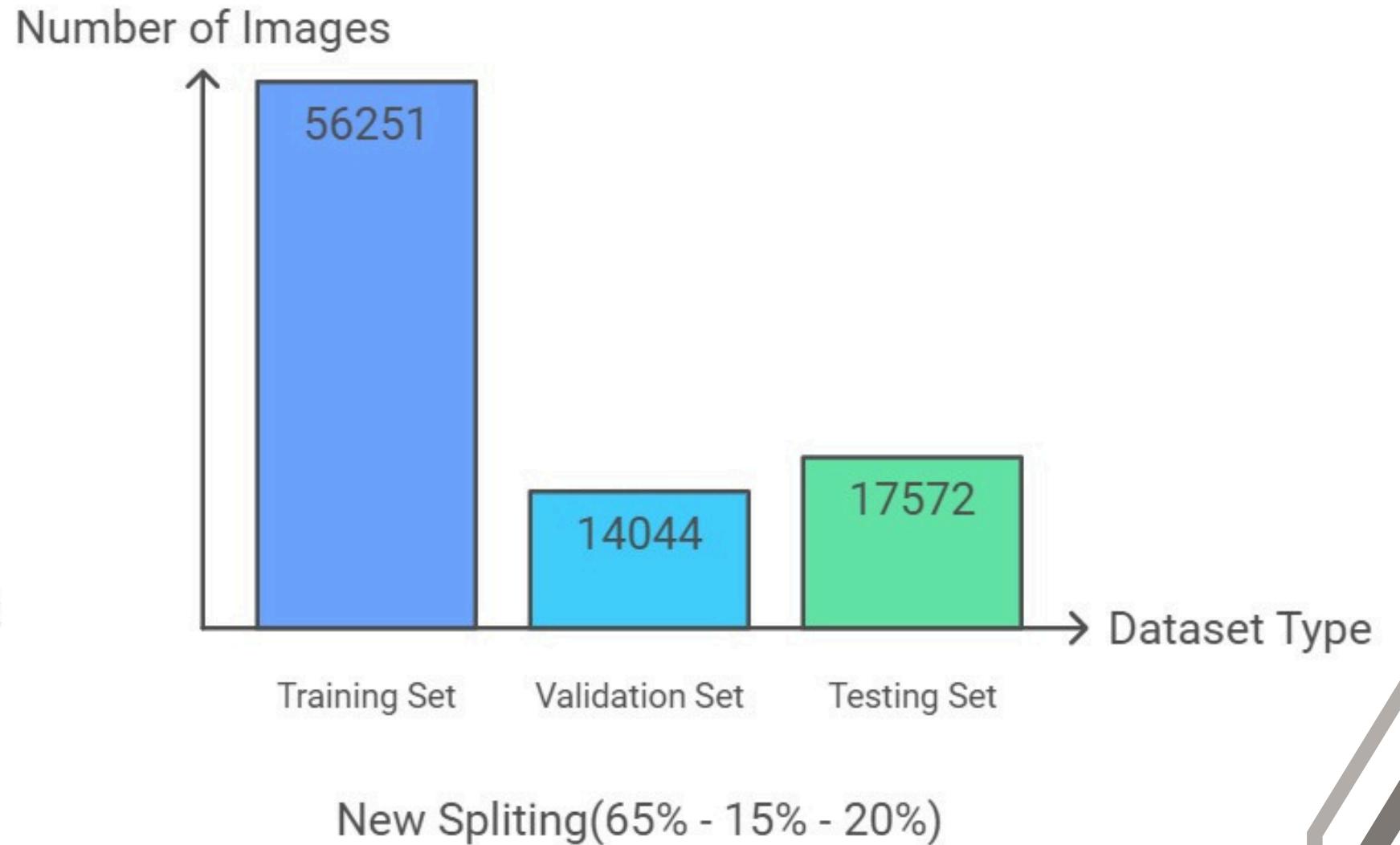
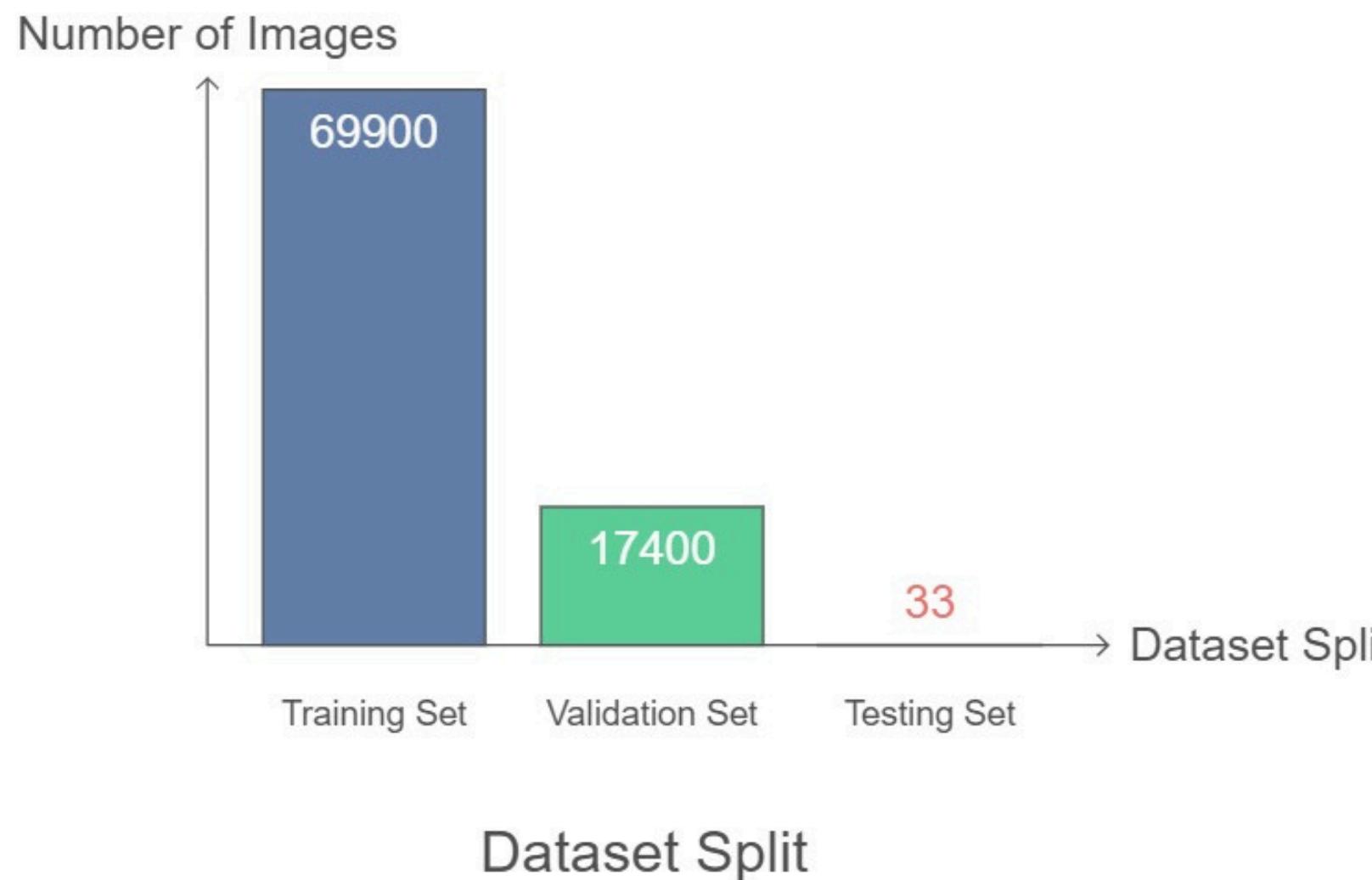


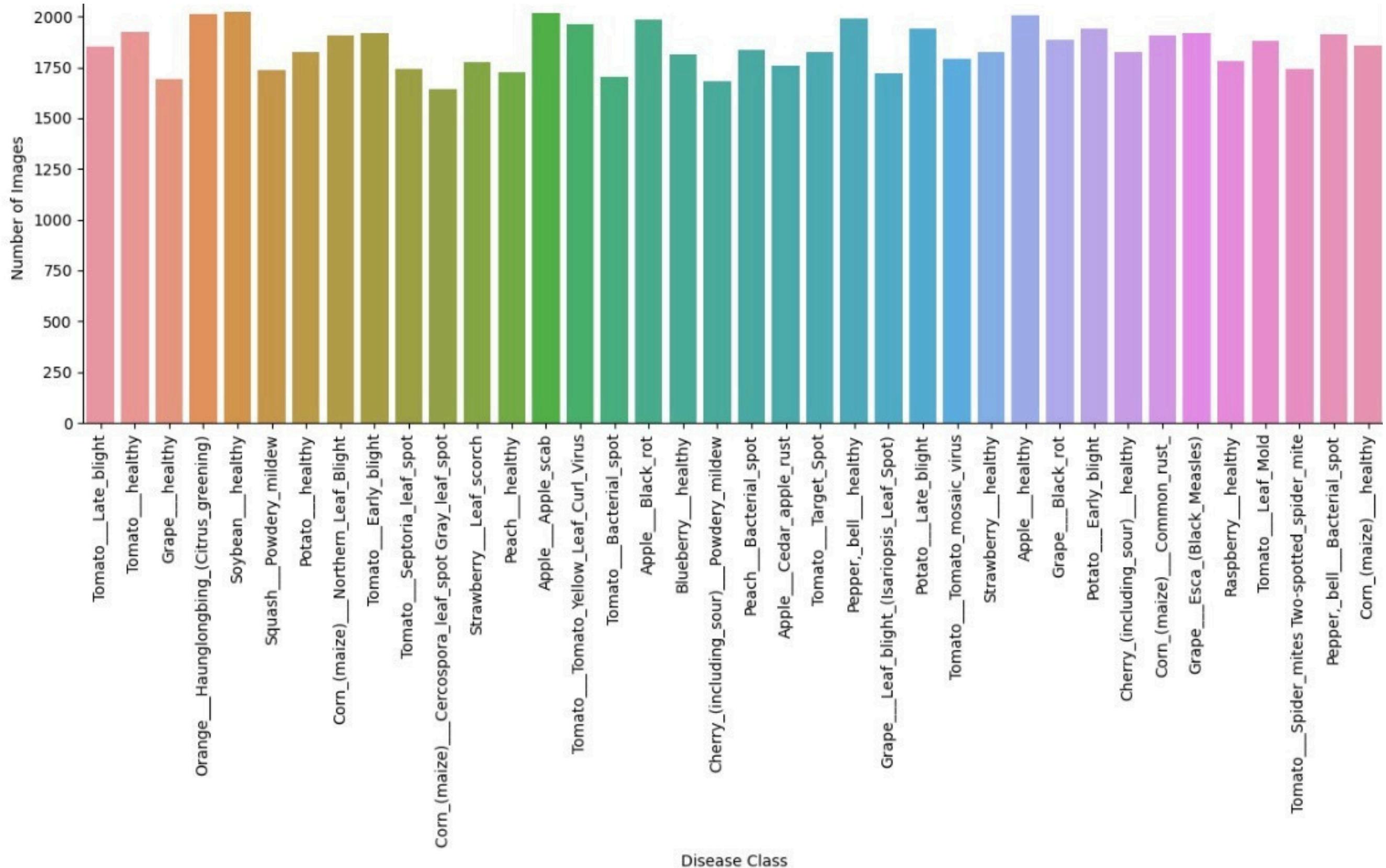
Machine Learning Model (CNN)



Splitting Dataset



Ensure that the data is balanced before training



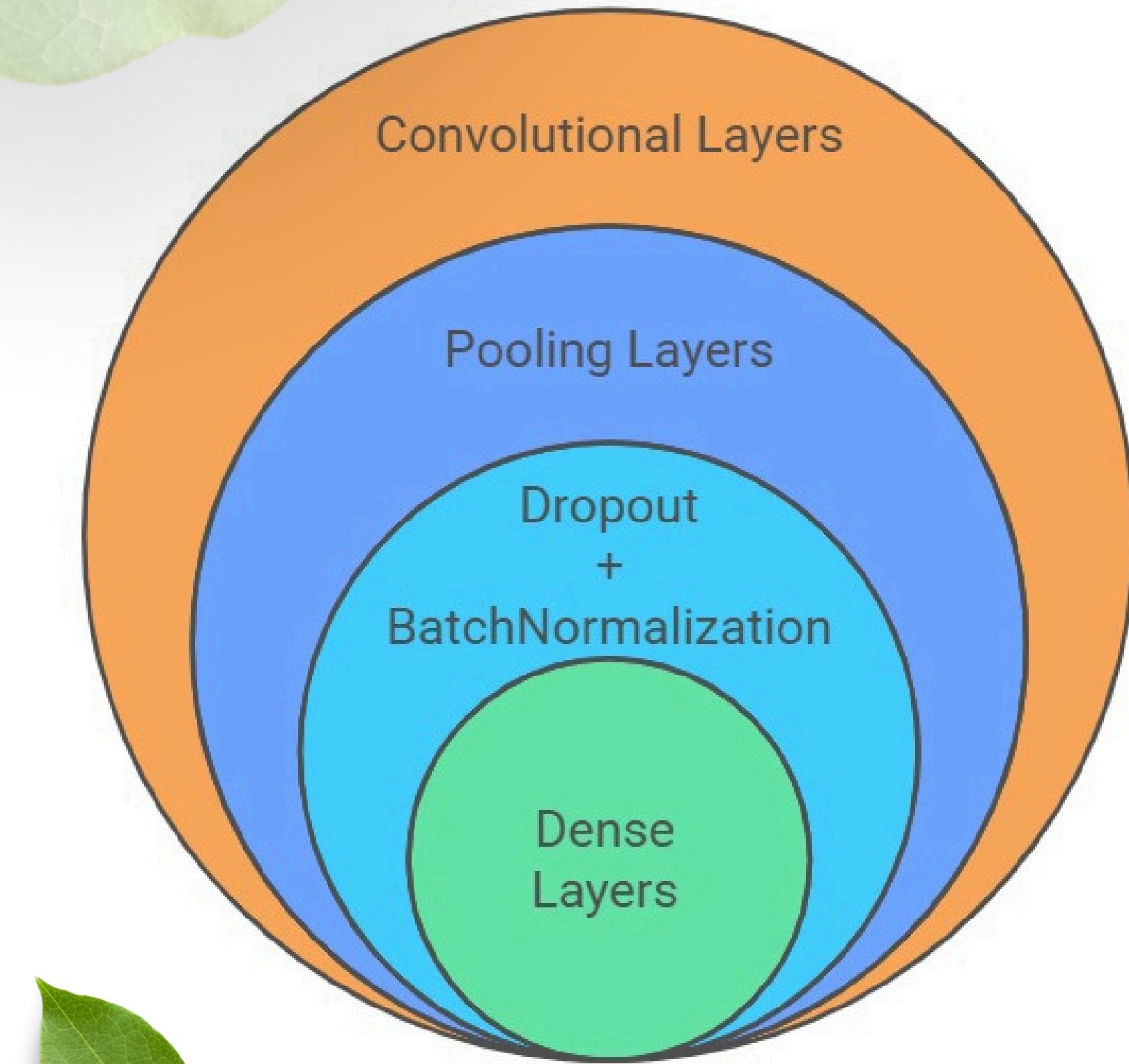
Data Preprocessing

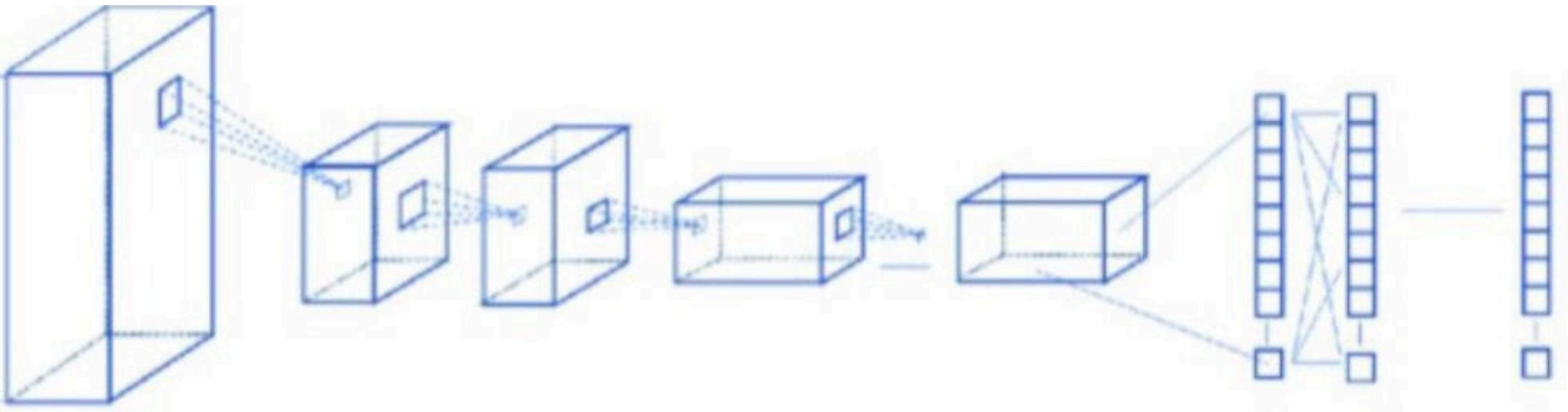
- Images are loaded directly from their directories using ImageDataGenerator, without the need for data augmentation.
- Only rescaling of pixel values is applied during loading to normalize the data



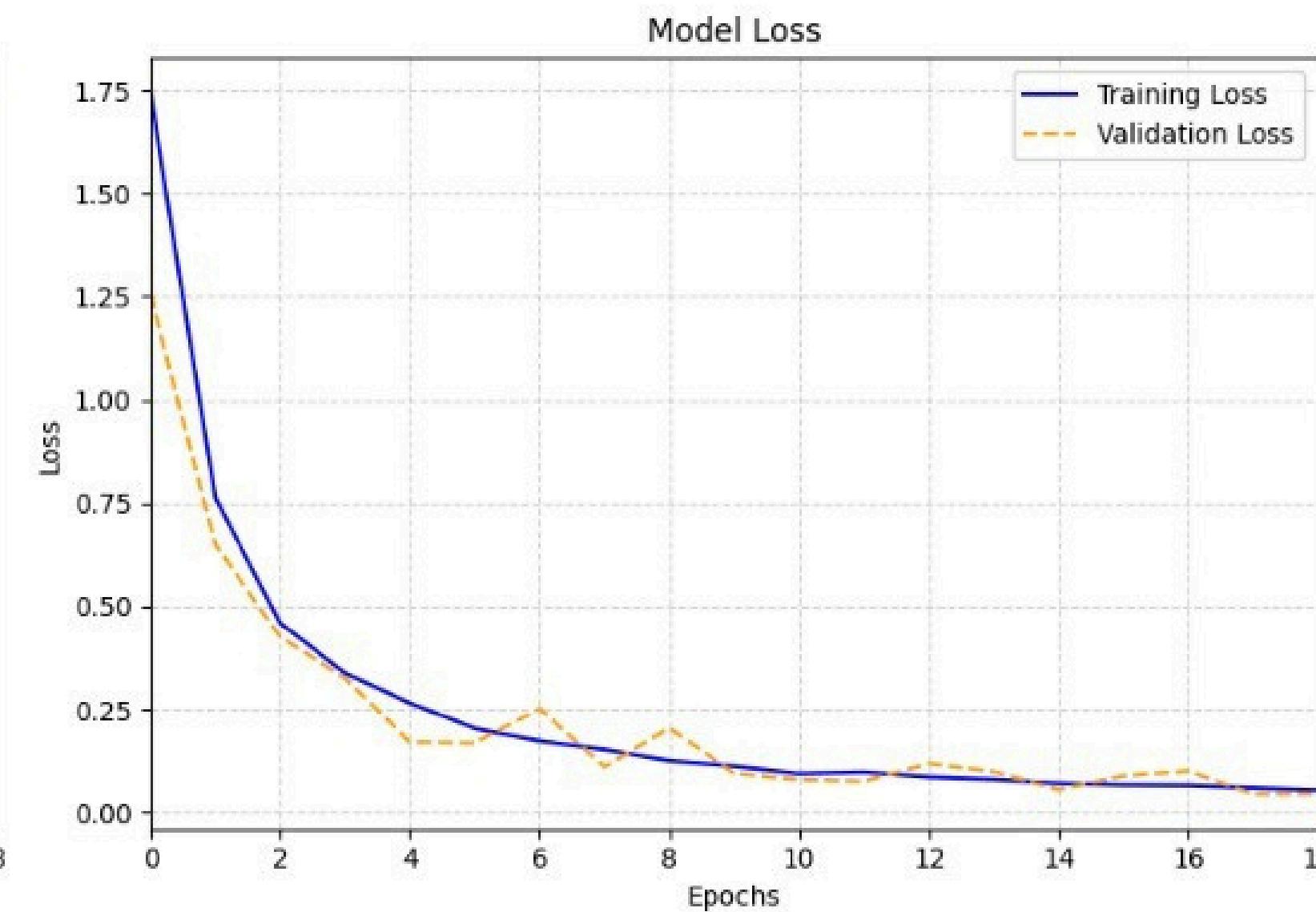
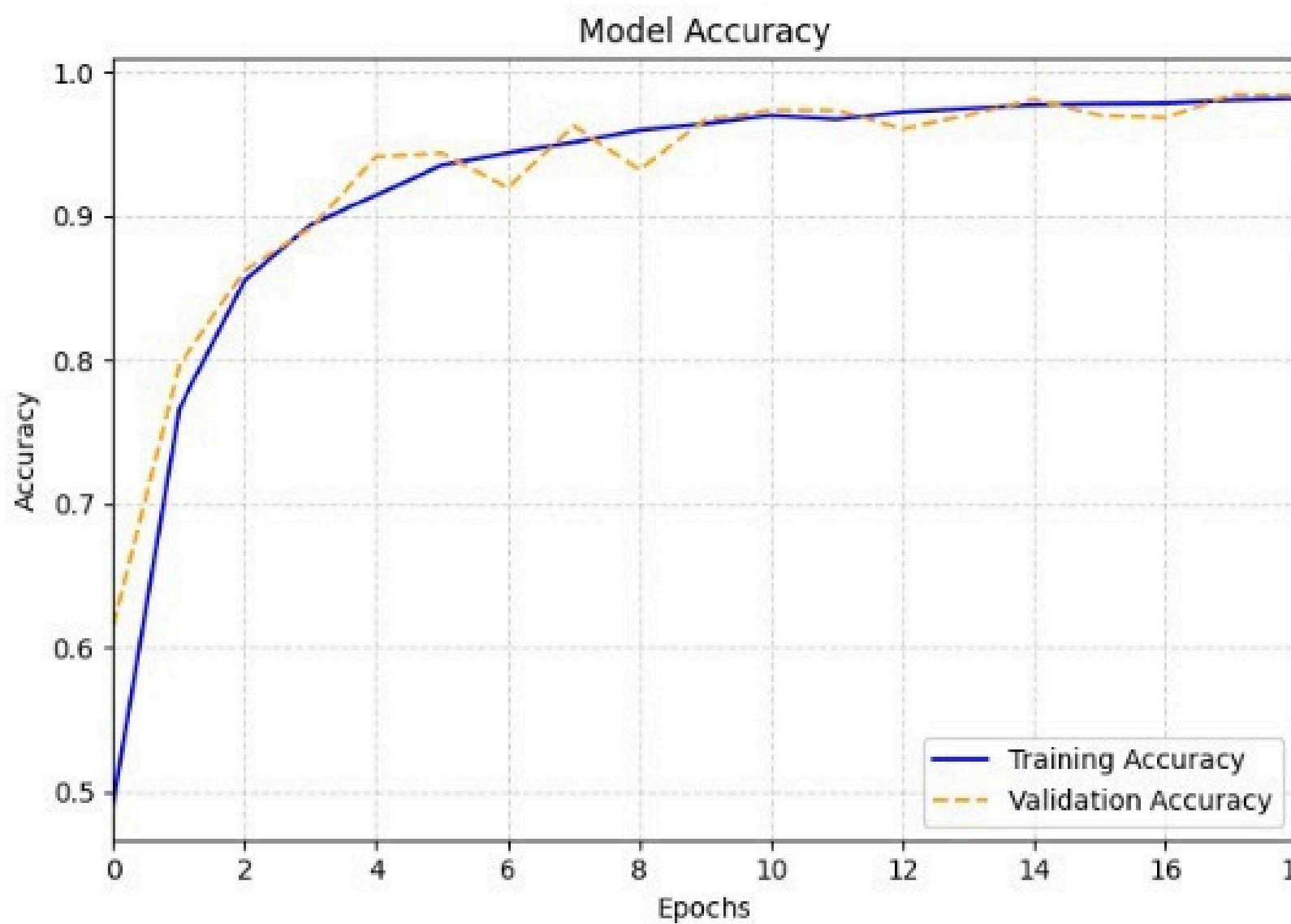
Detailed Model Layers

- 6 Conv2D
- 4 Pooling (Max + Global)
- 4 Dense
- 3 BatchNormalization
- 3 Dropout





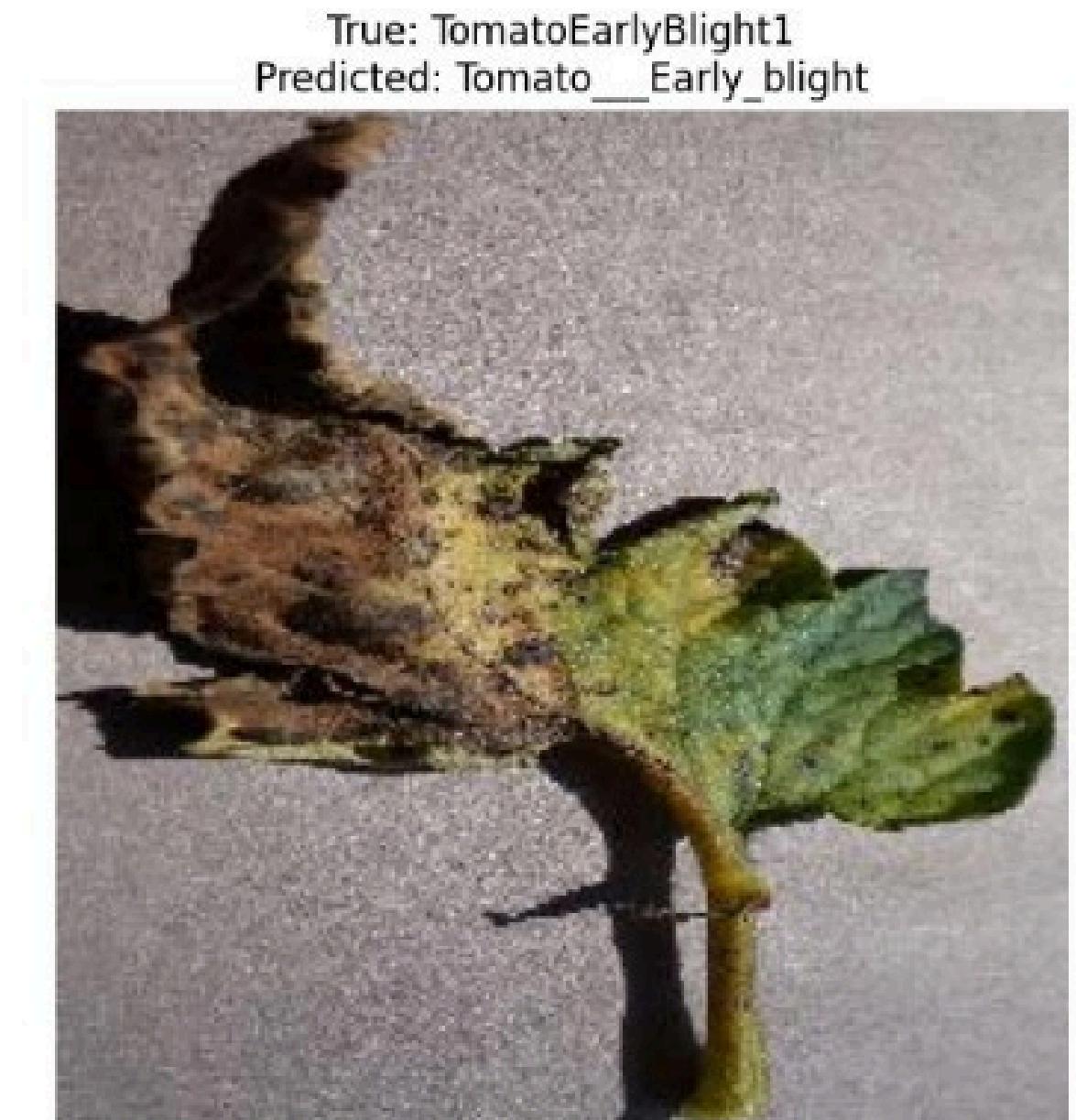
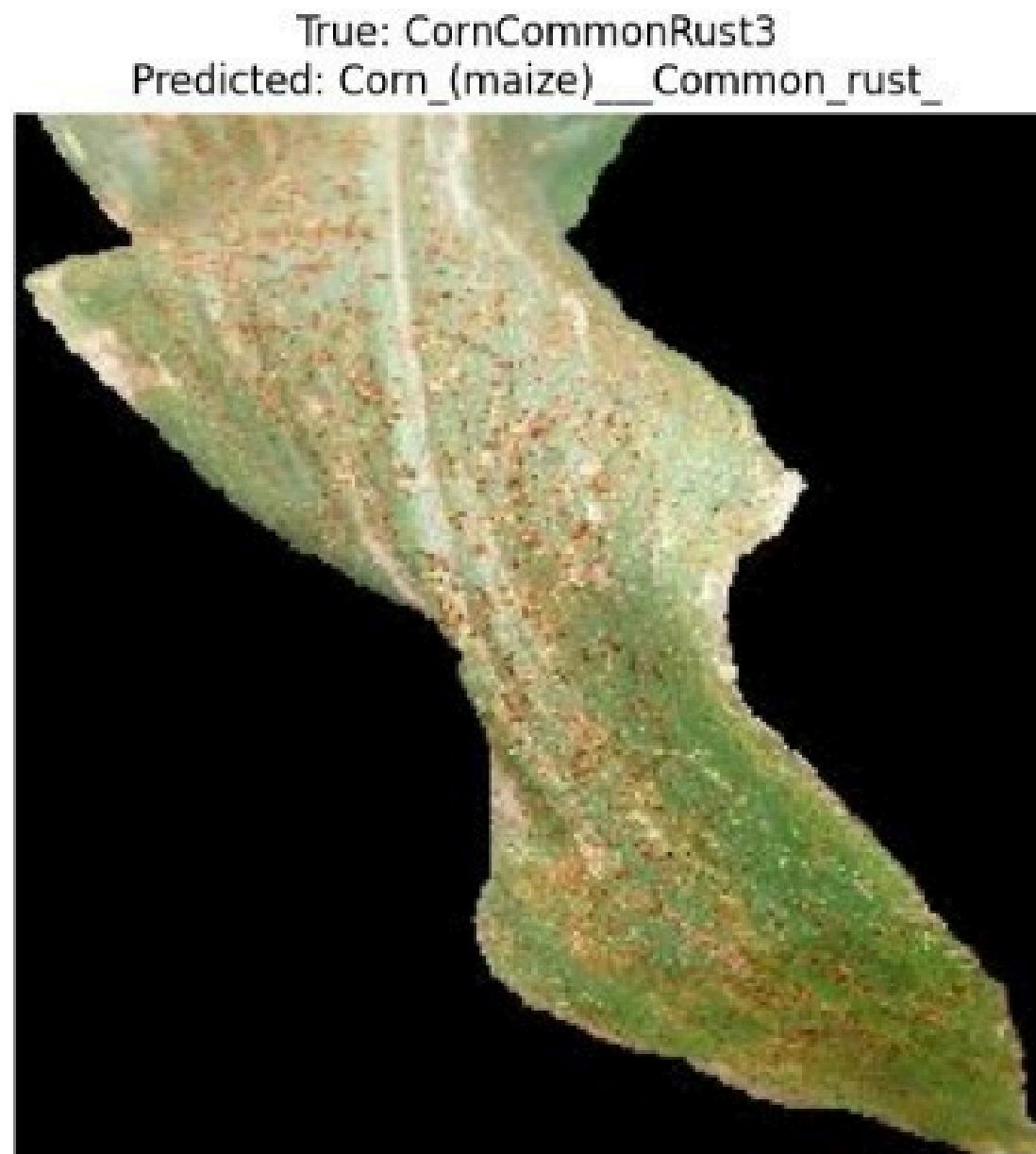
Evaluate model accuracy and loss



Model Accuracy

metric	precision	recall	f1-score	support	model
macro avg	0.987493	0.987162	0.987236	17572.0	CNN

VISUALIZATION OF PREDICTIONS



Evaluation Matrix for 38 class

