

Transform and Deep Learning Algorithms for the Early Detection and Recognition of Tomato Leaf Disease

Table S1. Results of DenseNet121 model in (80% training and 20% testing)

Class Name	Precision%	Recall%	F1-Score%	Support
Bacterial_Spot	0.98	0.97	0.97	220
Early_Blight	0.98	0.96	0.97	220
Late_Blight	0.97	0.99	0.98	220
Leaf_Mold	1.00	1.00	1.00	220
Septoria_Leaf_Spot	0.97	1.00	0.98	220
Spider_Mites_Two-Spotted_Spider_Mite	0.99	0.98	0.99	220
Target_Spot	0.97	0.98	0.97	220
Yellow_Leaf_Curl_Virus	0.99	0.98	0.98	220
Mosaic_Virus	1.00	1.00	1.00	220
Healthy	1.00	1.00	1.00	220
Accuracy of DenseNet121			0.98	2200
DenseNet121_Macro Avg	0.98	0.98	0.98	2200
DenseNet121_Weighted Avg	0.98	0.98	0.98	2200

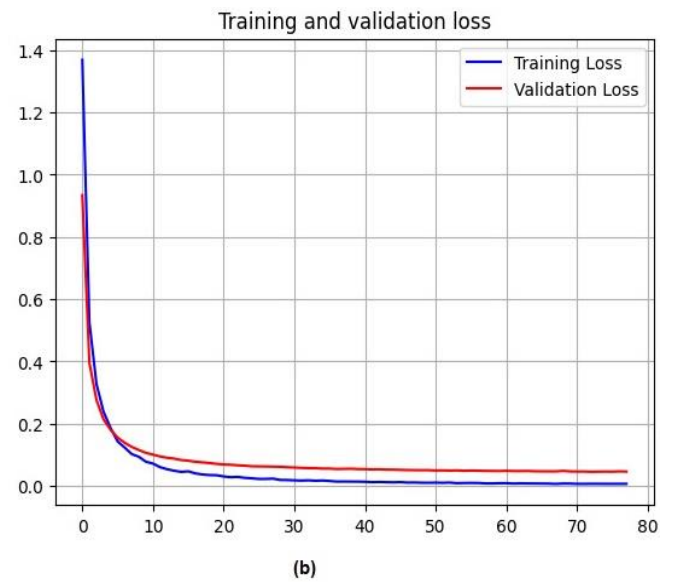
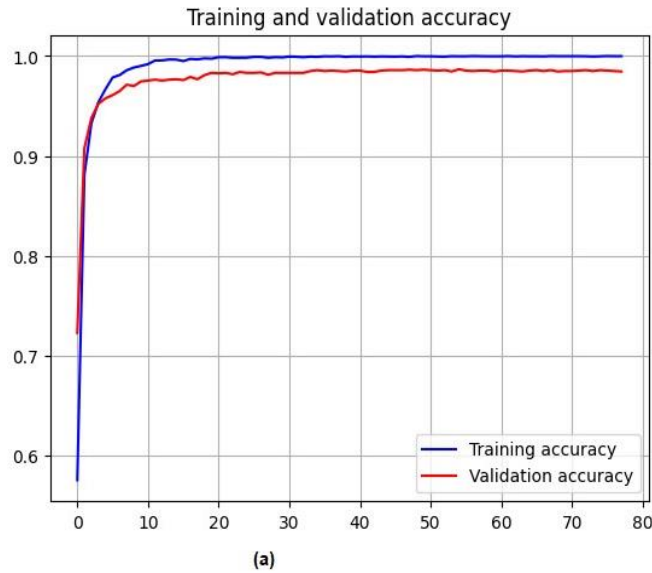


Figure S1. Performance of DenseNet121 model; a) DenseNet121 model accuracy and b) DenseNet121 mode loss with (80% training and 20 testing)

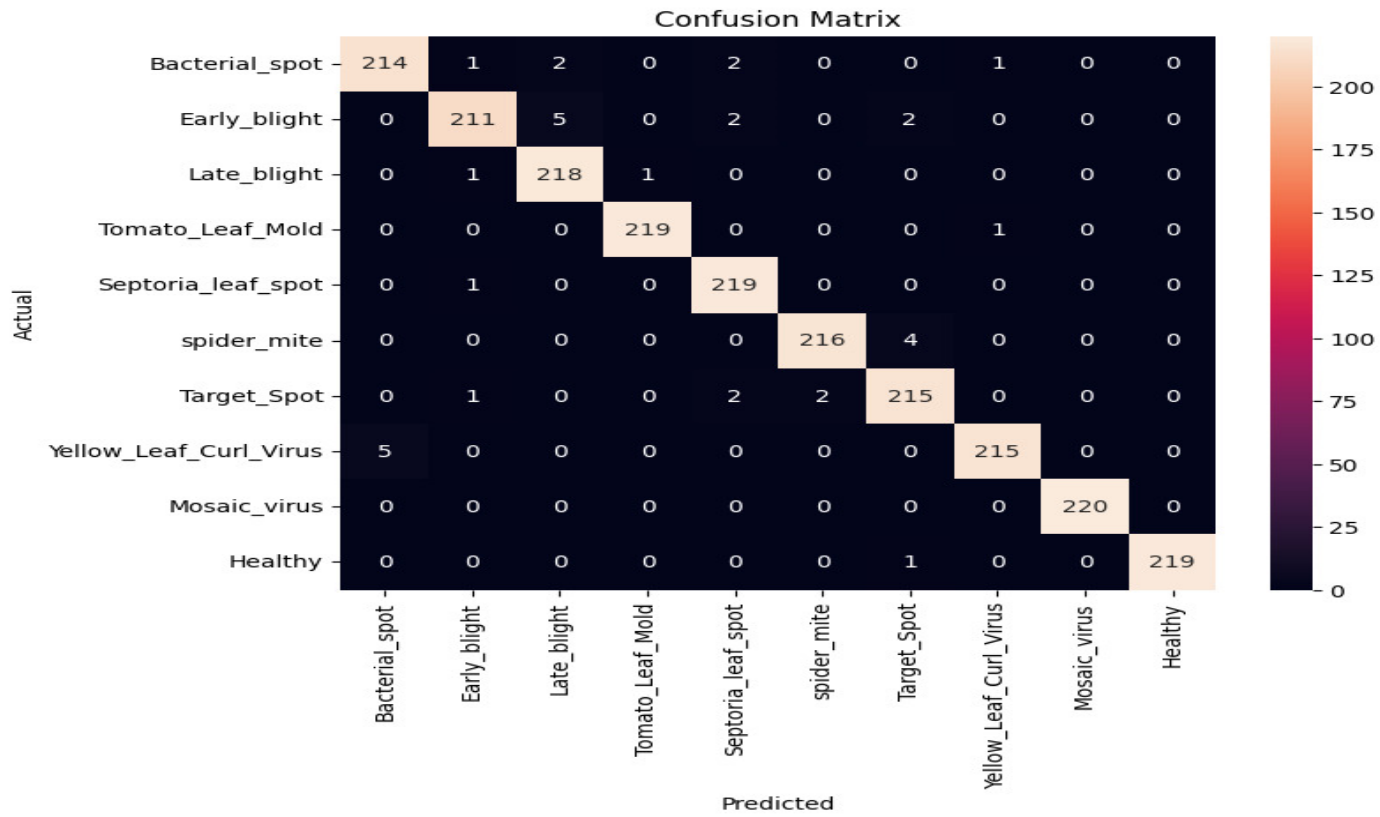


Figure S2. Confusion matrix of DenseNet121 with (80% training and 20 testing)

Table S2. Results of ResNet50V2 model with (80% training and 20% testing)

Class Name	Precision (%)	Recall (%)	F1-Score(%)	Support
Bacterial_Spot	0.95	0.95	0.95	220
Early_Blight	0.91	0.88	0.89	220
Late_Blight	0.92	0.91	0.91	220
Leaf_Mold	0.95	0.95	0.95	220
Septoria_Leaf_Spot	0.91	0.92	0.91	220
Spider_Mites_ Two-Spotted_Spider_Mite	0.95	0.93	0.94	220
Target_Spot	0.91	0.94	0.92	220
Yellow_Leaf_Curl_Virus	1.00	0.97	0.99	220
Mosaic_Virus	0.97	1.00	0.98	220
Healthy	0.98	0.99	0.99	220
Accuracy			0.94	2200
DenseNet121_Macro Avg	0.94	0.94	0.94	2200
DenseNet121_Weighted Avg	0.94	0.94	0.94	2200

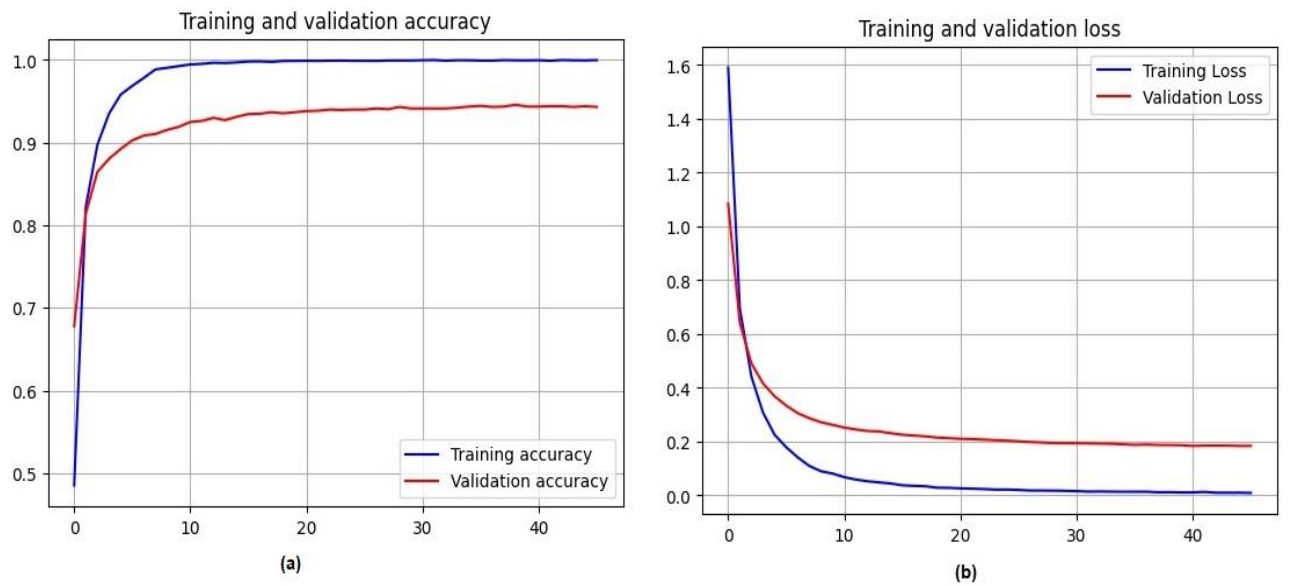


Figure S3. Performance of the ResNet50V2 model; a) ResNet50V2model accuracy and b) ResNet50V21 mode loss with (80% training and 20%testing)

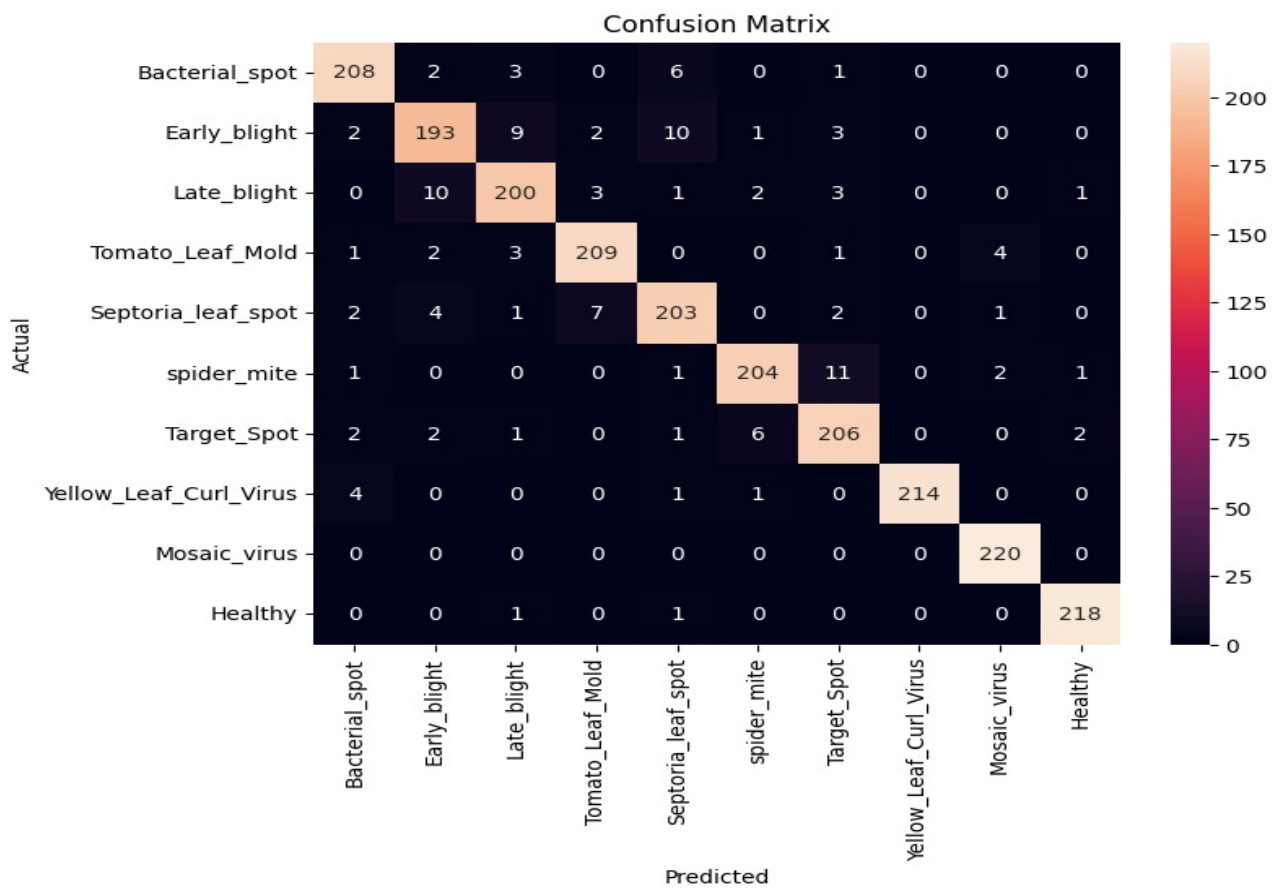


Figure S4. The ResNet50V2 model's confusion matrix with (80% training and 20% testing)

Table S3. Results of ViT model with (80% training and 20% testing)

Class Name	Precision (%)	Recall (%)	F1-Score(%)	Support
Bacterial_Spot	99	94	96	100
Early_Blight	97	99	98	100
Late_Blight	98	100	99	100
Leaf_Mold	99	96	97	100
Septoria_Leaf_Spot	99	99	99	100
Spider_Mites_ Two-Spotted_ Spider_ Mite	00	98	99	100
Target_Spot	95	99	97	100
Yellow_Leaf_Curl Virus	98	97	97	100
Mosaic_Virus	100	100	100	100
Healthy	95	98	97	100
Accuracy				
DenseNet121_Macro Avg			98	1000
DenseNet121_Weighted Avg	98	98	98	1000
Bacterial_Spot	98	98	98	1000

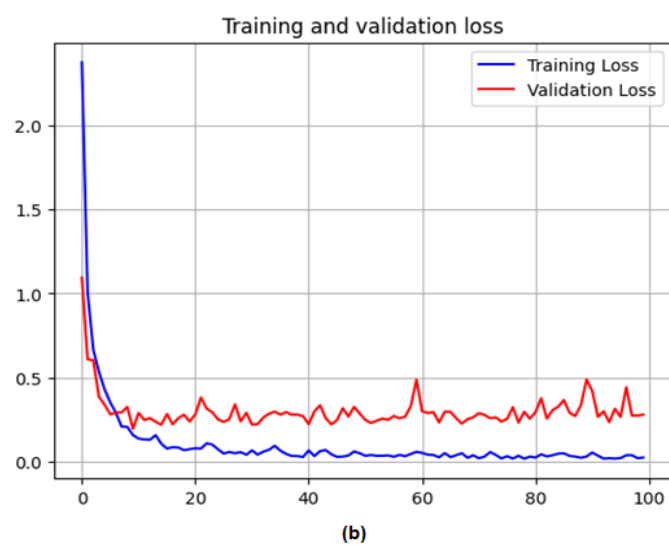
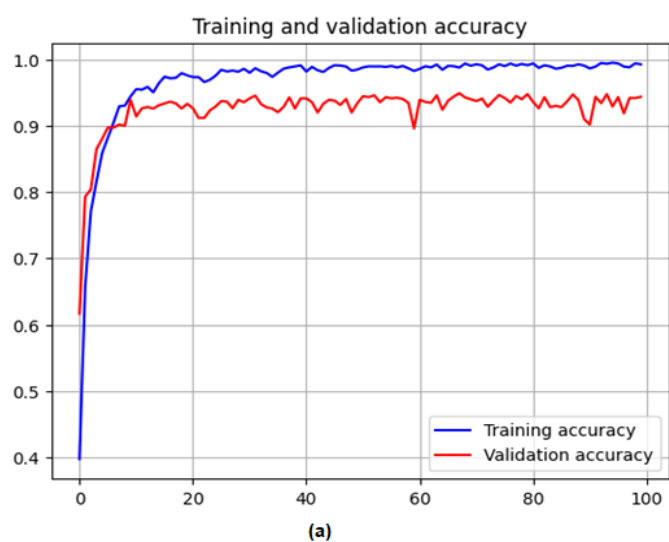


Figure S5. ViT model performance; a) ViT model accuracy and b) ViT model loss with (80% training and 20% testing)

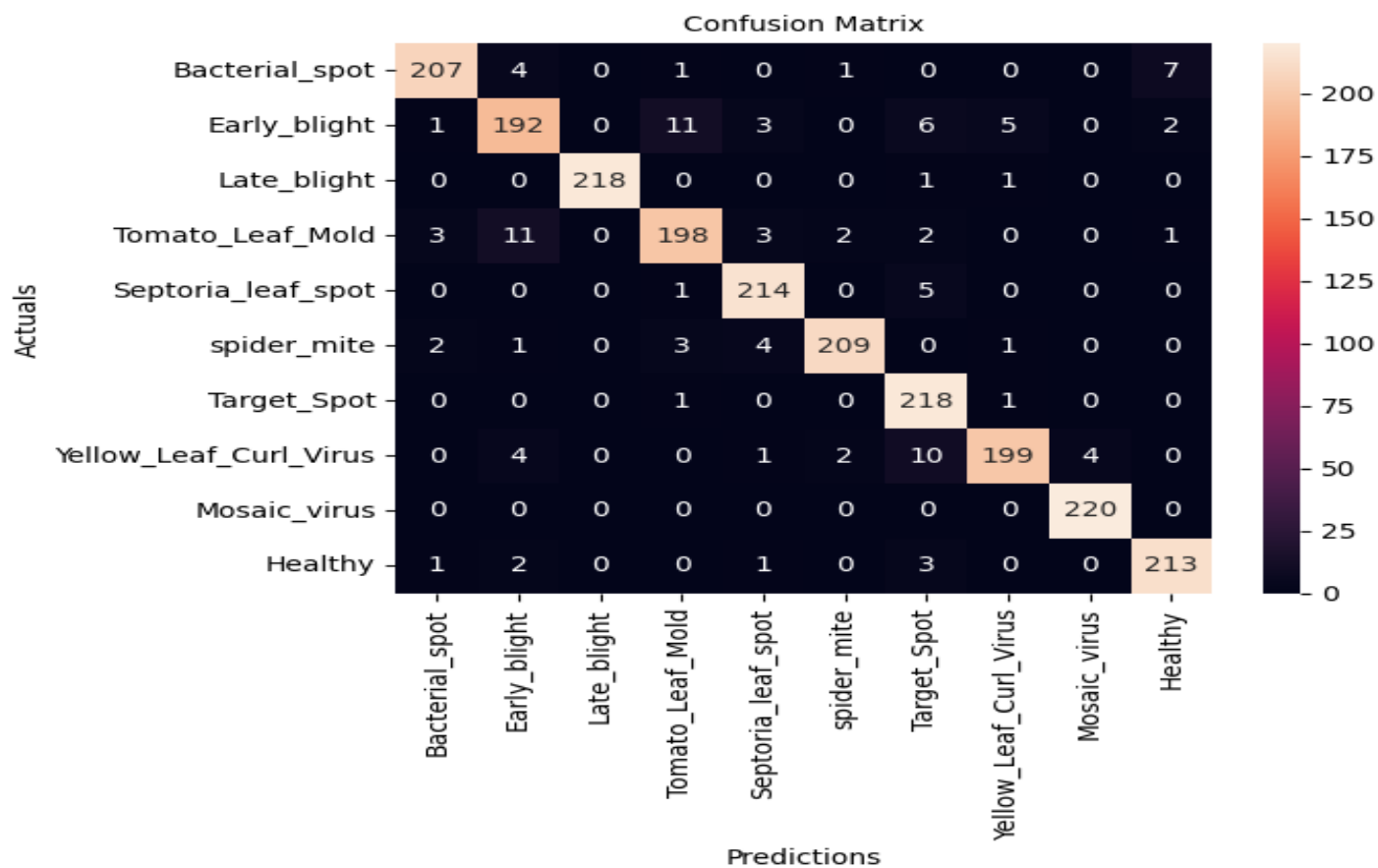


Figure S6. confusion matrix of ViT model with (80% training and 20% testing)