➢ **GROUP**

Hamza Haruna MOHAMMED

Selim SURUCU

➢ **Methods (Transfer Learning)**
- RESNET34
- RESNET50
- Vgg19_bn
- Alexnet
- Densenet201
- Mobilenet_v2
- Squeezenet1_1
- InceptionV3

➢ **Model Evaluation**
  o Evaluate how accurate the model performs with respect to the data (Accuracy, score)
  o Find the average error of your model (use testing data only) a.k.a model test/prediction evaluation
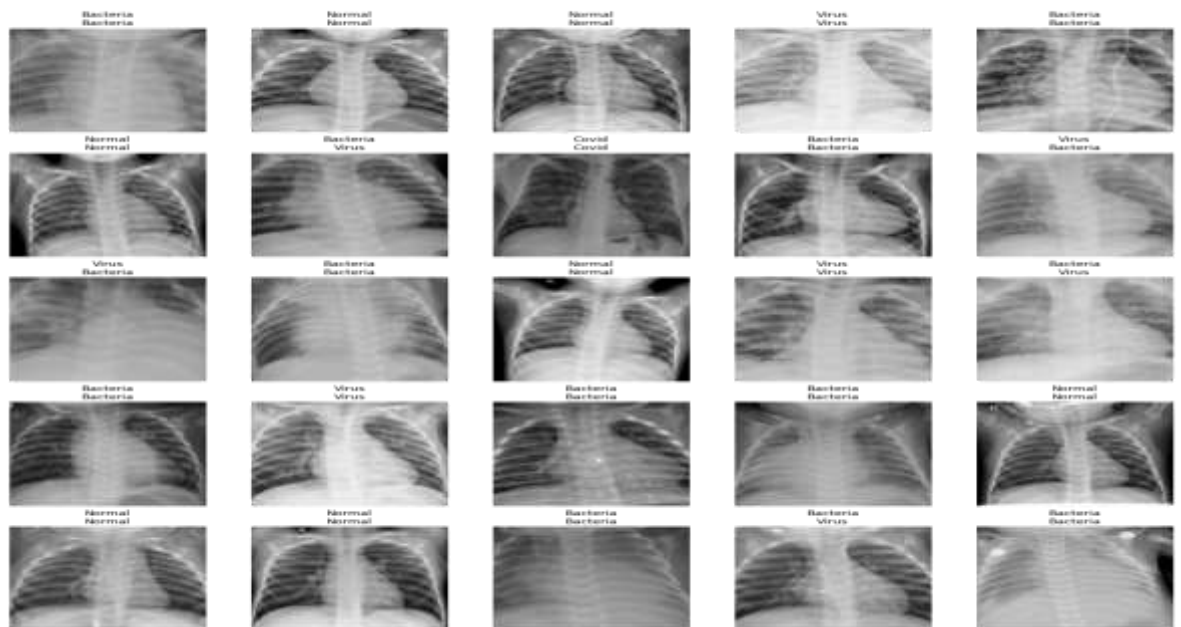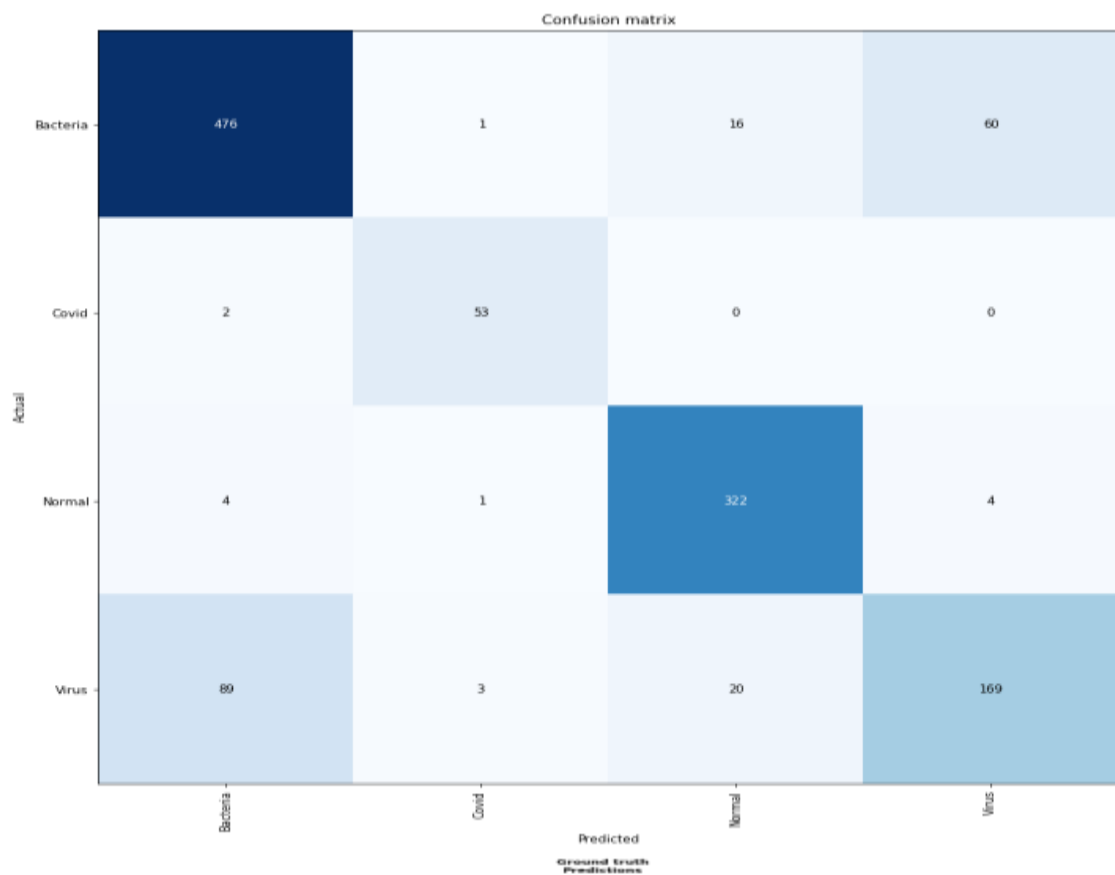
➢ **Results**
Model Accuracy with **Epoch=8**

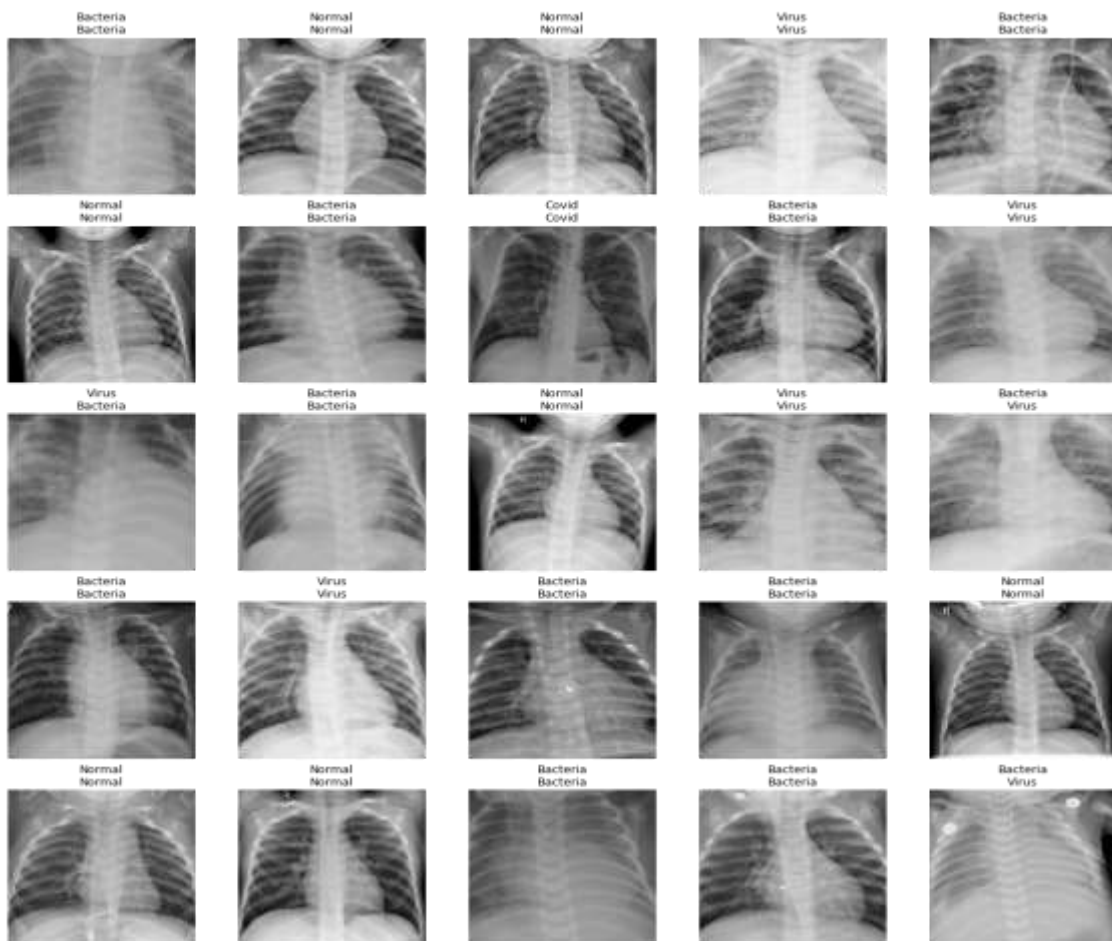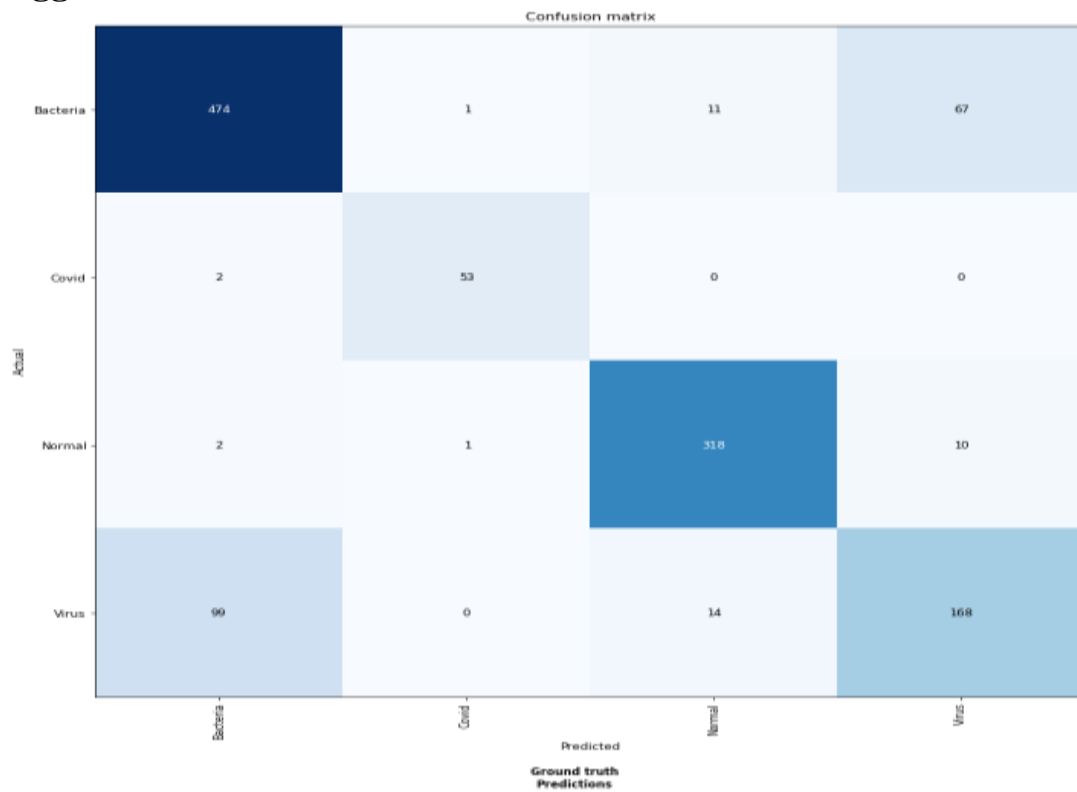| Resnet34	Resnet50	Vgg19	Alexnet	Densenet201	Mobilenet_v2	Squeezenet1_1	CNN
0.836	0.849	0.830	0.828	0.864	0.849	0.829	0.778

Below is the **confusion matrix** (*True Positive (TP), True Negative (TN), False Positive (FP), False Negative (FN)*) in-terms of the 4 labels (Bacteria, Covid-19, Normal, Virus) showing the variation truth how many labels are correctly predicted in each class-label. We also included the ground truth figure showing the prediction and ground truth of the certain images predicted in each model, in order to validate the confusion matrix.
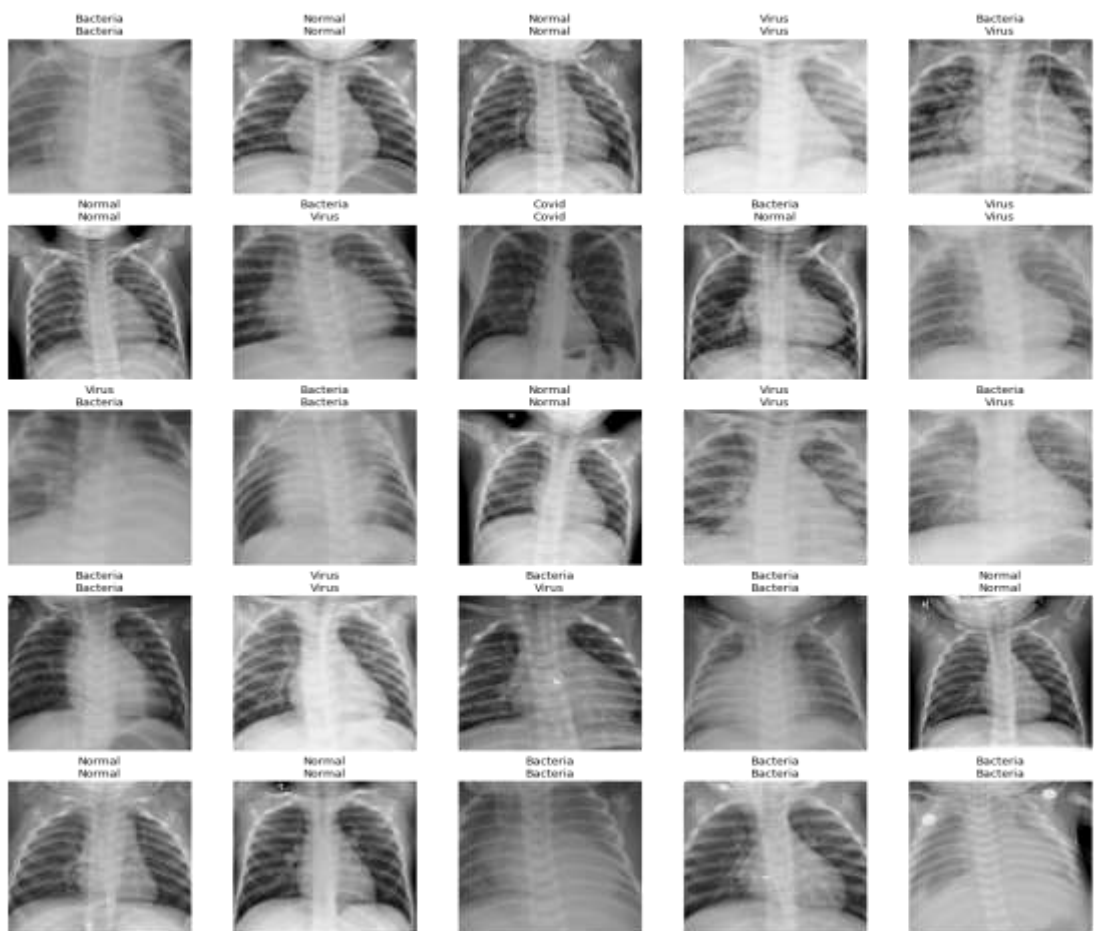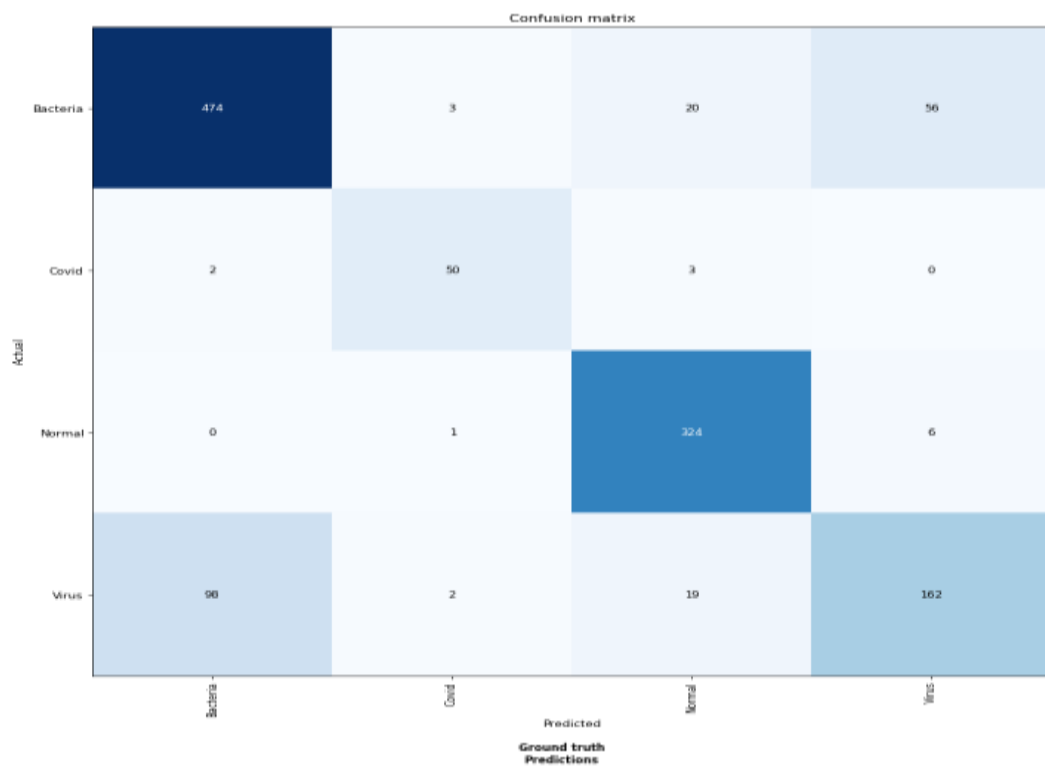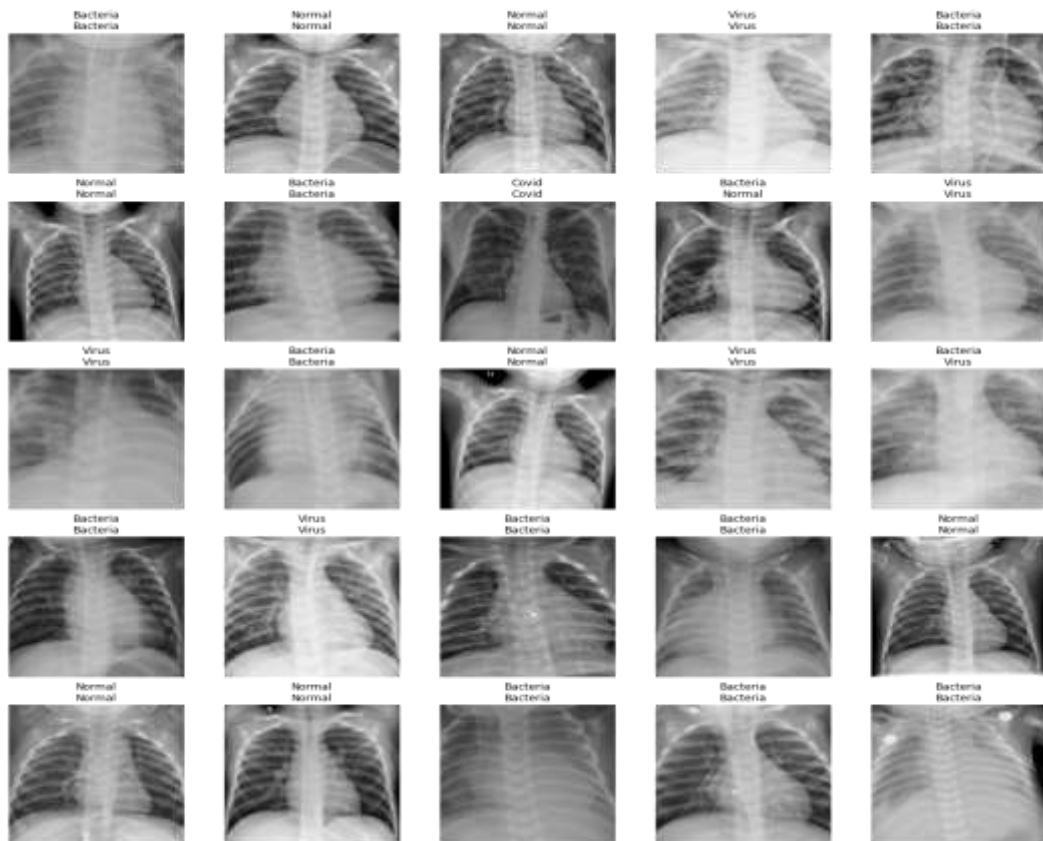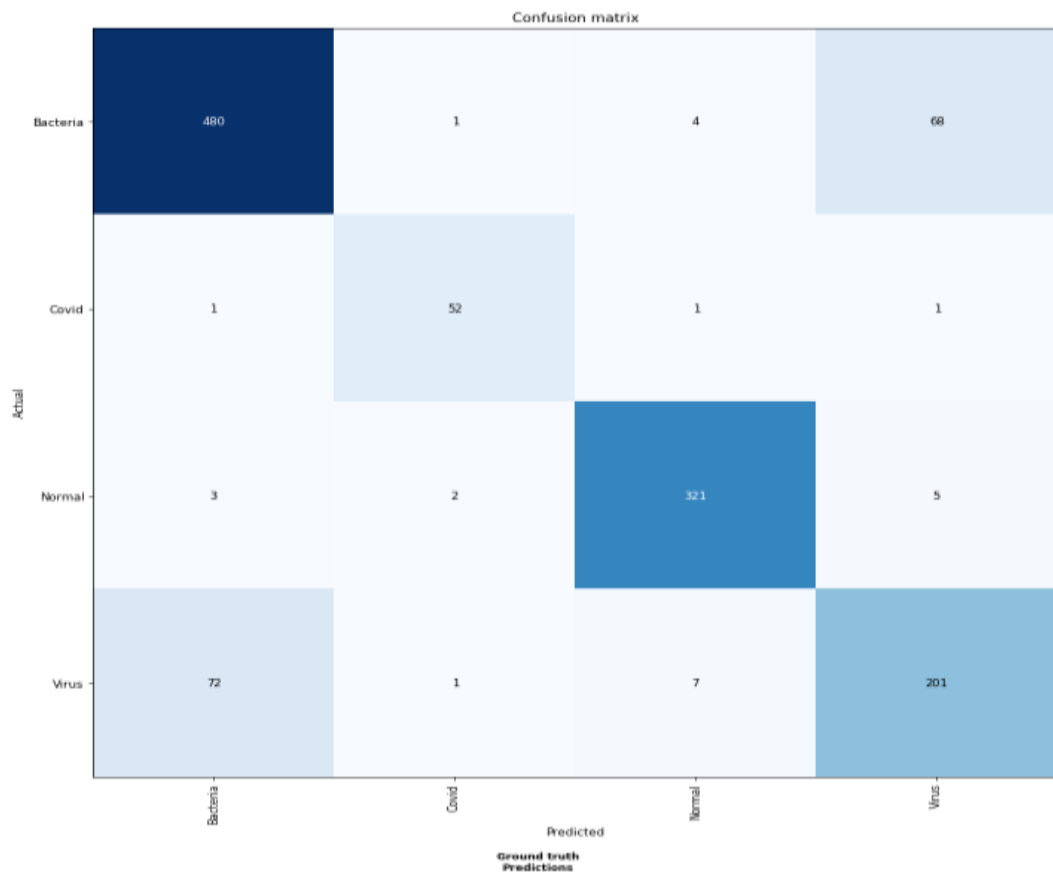
- **Resnet34**

Confusion matrix

- **Resnet50**

Confusion matrix

	Bacteria	Covid	Normal	Virus
Bacteria	467	1	11	74
Covid	0	54	1	0
Normal	0	2	326	3
Virus	77	1	14	189

Predicted

Ground truth
Predictions

- **Vgg19_bn**

- **Alexnet**

Confusion matrix

	Bacteria	Covid	Normal	Virus
Bacteria	474	3	20	56
Covid	2	50	3	0
Normal	0	1	324	6
Virus	98	2	19	162

Predicted
Ground truth
Predictions

- **Densenet201**

Confusion matrix

- **Mobilenet_v2**

Confusion matrix

- **Squeezenet1_1**

Confusion matrix