Confidential

Leaf Classification

Under Directed by
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日付
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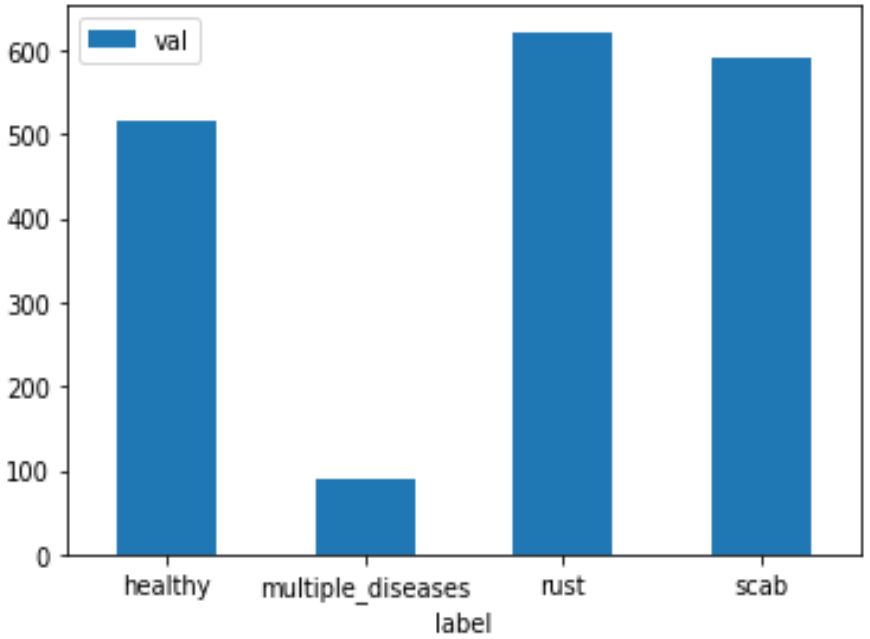
Problem Description

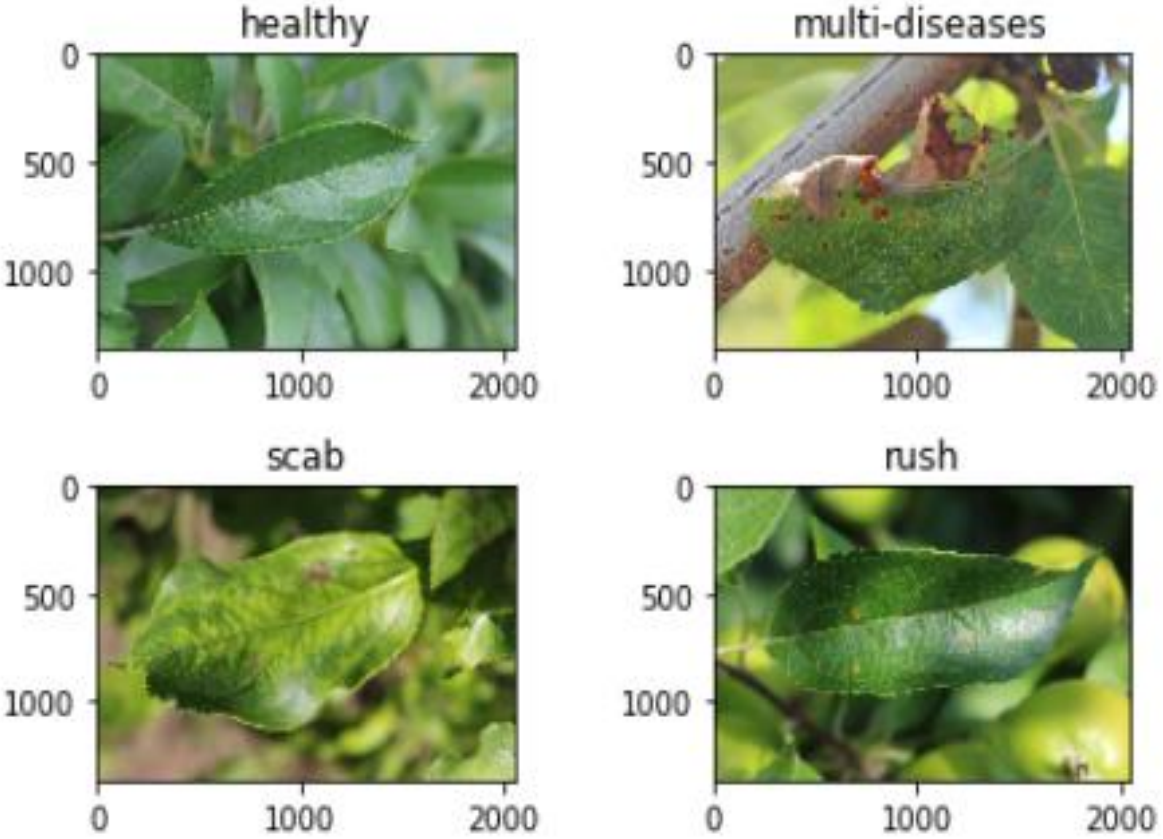
- Classify the Apple tree leaf whether the leaf is healthy or not?

Dataset Description

- The datasets have four classes. Healthy, multi-diseases, Scab, Rush
- Below is the class distribution bar chart



Sample Data



Chosen Model

- We chose an *open source model* which offer the state of the art performance in the leaderboard.
- Their proposed model was PyramidNet-200 & PreAct-ResNet18.
- They used **Fmix** augmentation method which bright them Remarkable performance.

Fmix Augmentation

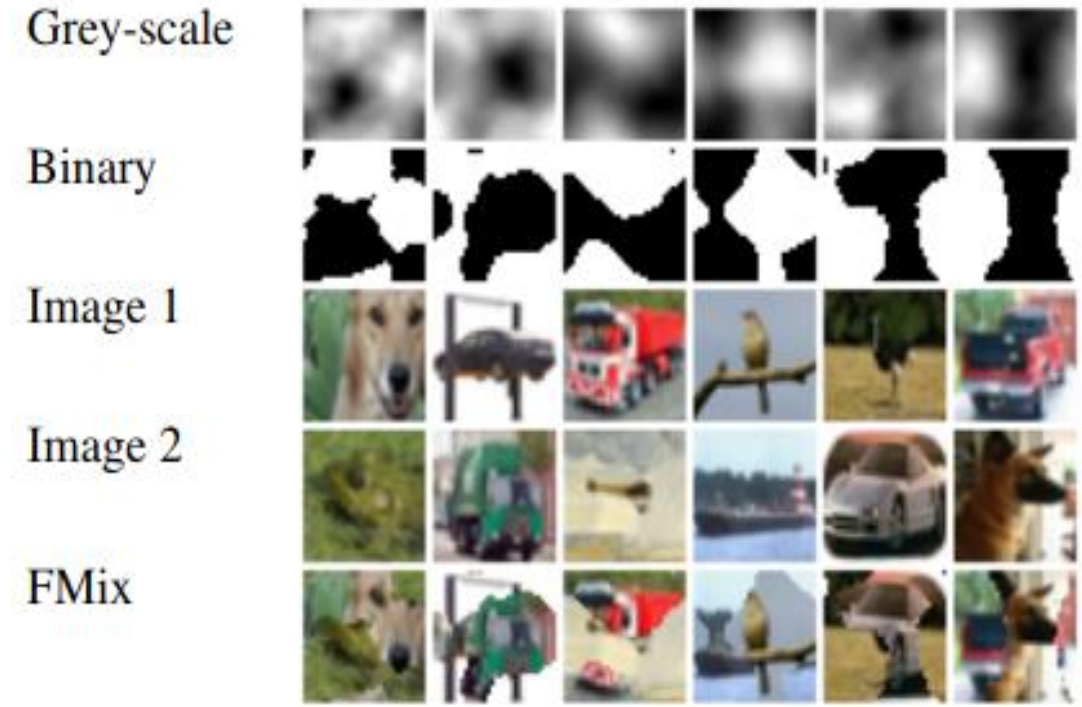


Figure 1: Example mask and mixed images from ImageNet for FMix with $\delta = 3$ and $\lambda = 0.5$.

Training

- Trained the model for all four classes of the datasets.
- The performance was not good. It generated only 43% accuracy.
- Did some fine-tuning but it wasn’t improved the performance.

Improvement

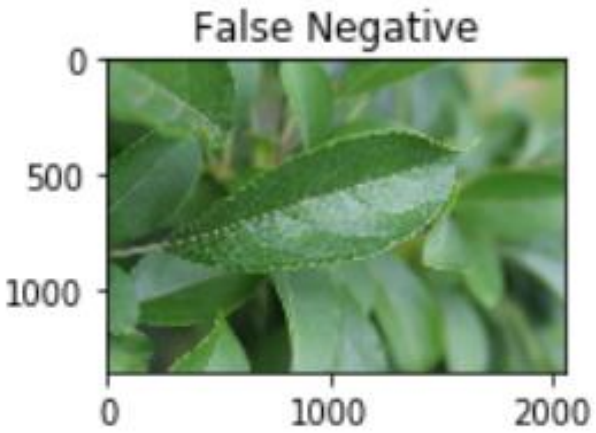
- Kato-san suggested me that we can consider all datasets into two classes.
- Healthy vs other three classes. It generated good performance but result was one sided biased.
- healthy vs other one. It generated 64.93% accuracy.

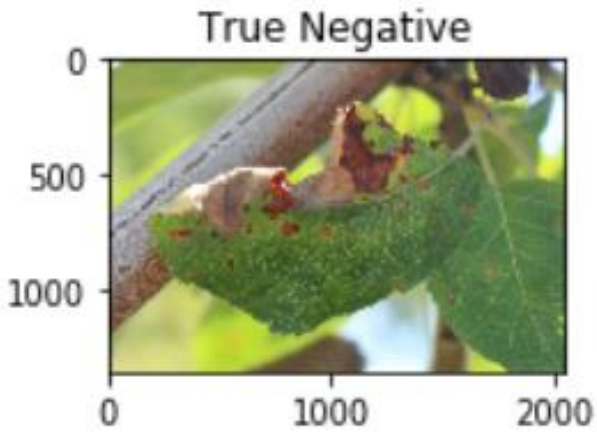
Evaluation Stats

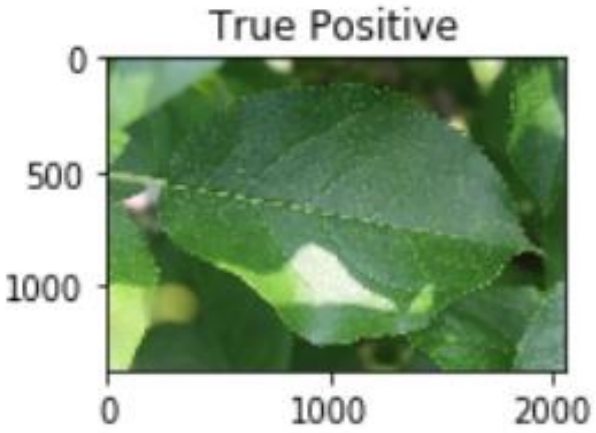
		Predicted	
		P	N
Actual	P	95(TP)	70(FP)
	N	46(FN)	77(TN)

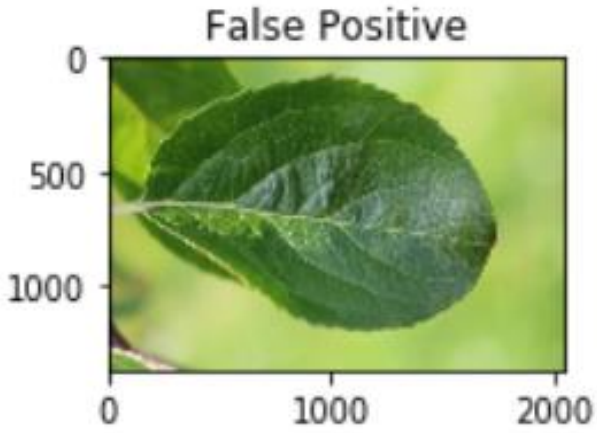
- Accuracy = 64.93%
- Precision = TP/(TP+FP) = 0.67
- Recall = TP/(TP+FN) = 0.57

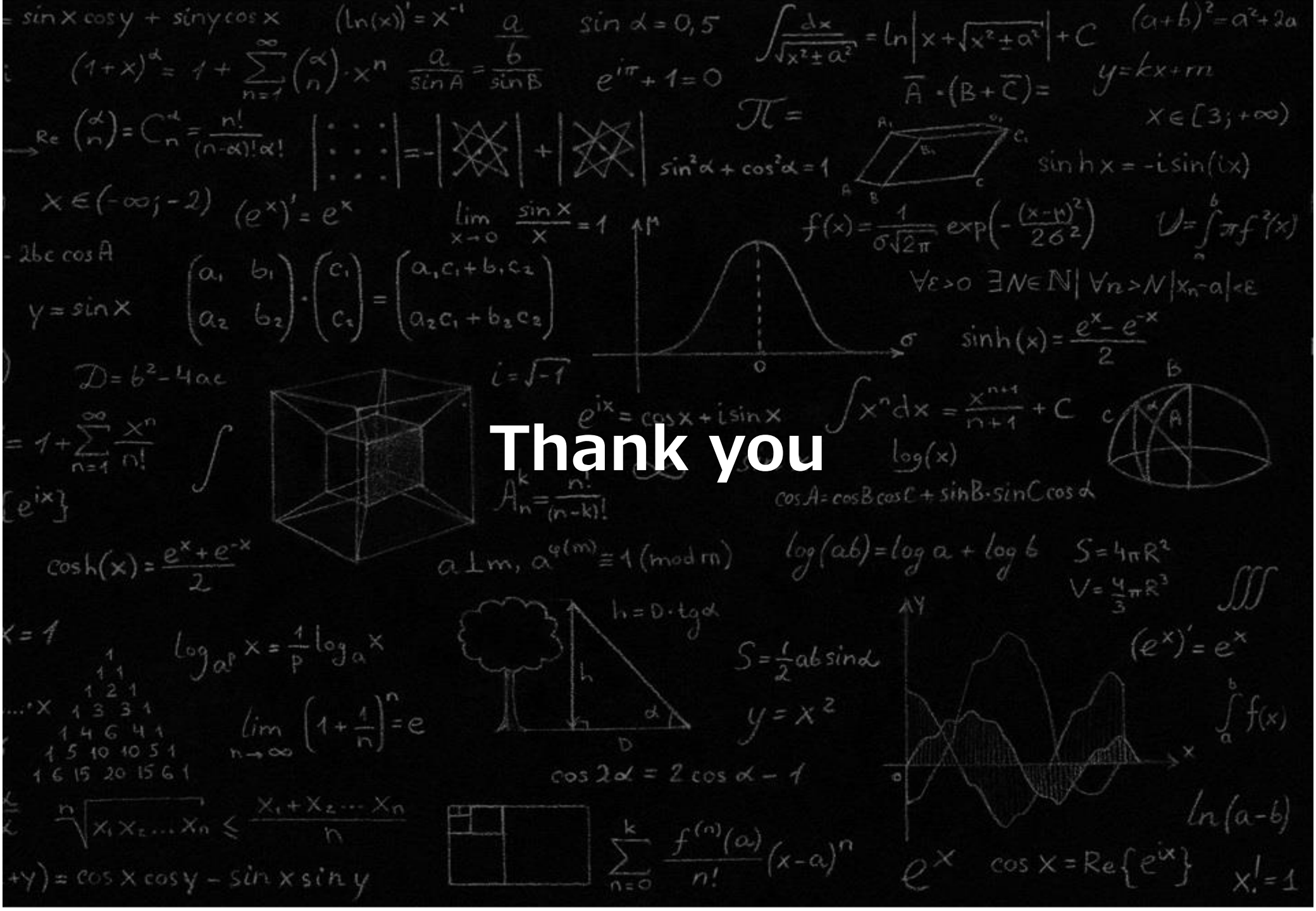
Sample Prediction










Thank you