AutoML Modeling Report

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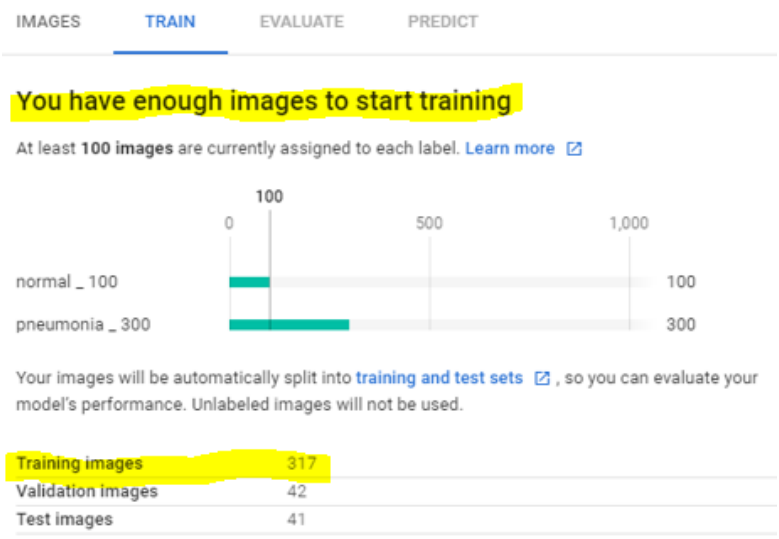
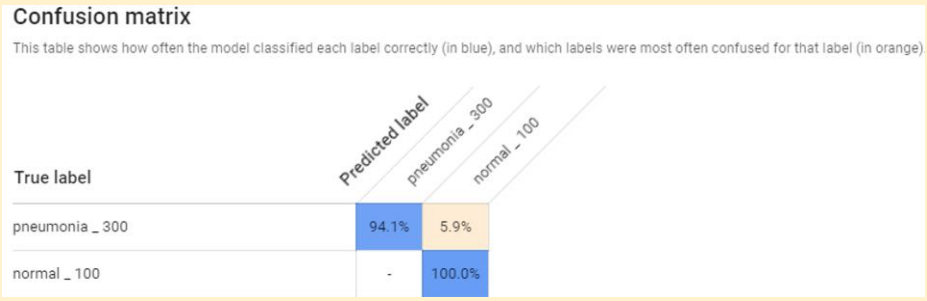
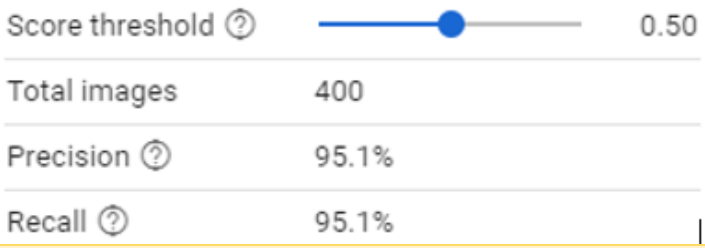
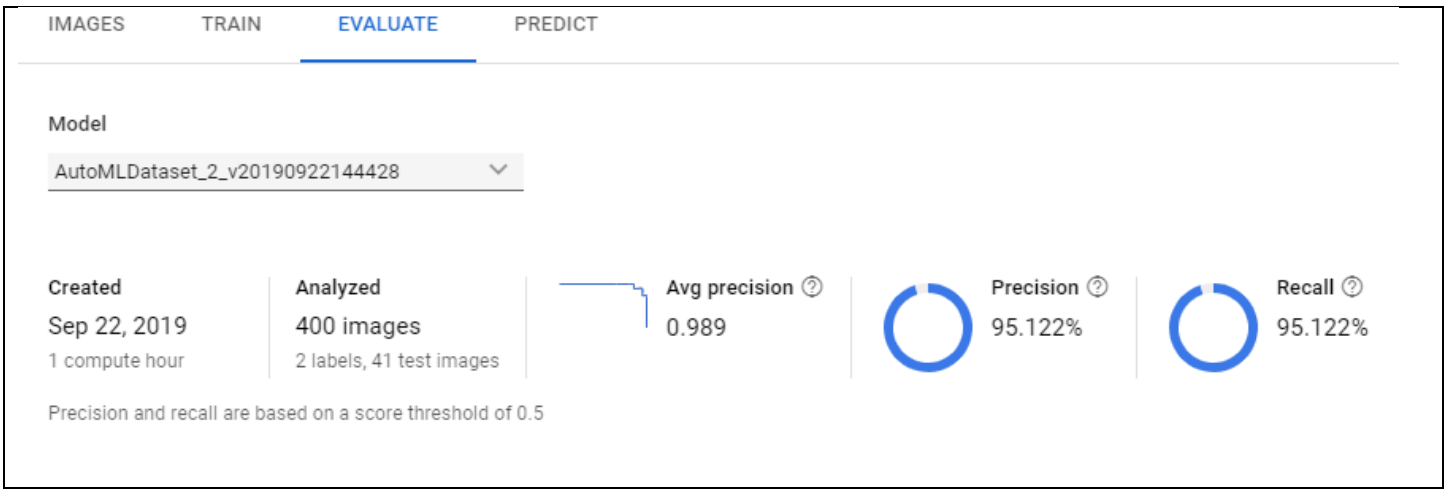
Binary Classifier with Clean/Unbalanced Data

Train/Test Split	317 data images used for training 41 data images used for testing 42 data images used for validation 
Confusion Matrix	The confusion matrix shows that 100% of the "normal" labelled class was correctly predicted/classified 100% of the time in the "normal" category during evaluation; and the "pneumonia" labelled class was classified correctly 94.1% times in the "pneumonia" category - this shows that for 5.9% of the evaluation time, 'normal' labelled images were often incorrectly predicted and confused with 'pneumonia' labels. Effect of unbalanced data in the confusion matrix shows that both values in the blue diagonal (94.1% and 100.0%) is high compared to 5.9% confused/incorrect predictions, and the classifier is still identifying categories correctly to the extent indicated. 

Precision & Recall	For a score threshold of 0.5, the unbalanced data caused the model to achieve the same precision and recall of 95.1% each (see image below) for every labelled 'pneumonia' and 'normal' images – which is reasonably high but not perfect (if 100%); and the model will produce fewer false positives and fewer false negatives. 
Unbalanced Classes	My observation with model outcomes of unbalanced classes is that outcome can be biased and misleading; also accurate data balance and effective class distribution are not accounted for – this might be due to the fact that the main purpose of designing ML Algorithms is to improve accuracy by reducing (outcome/result) errors.

EVALUATE



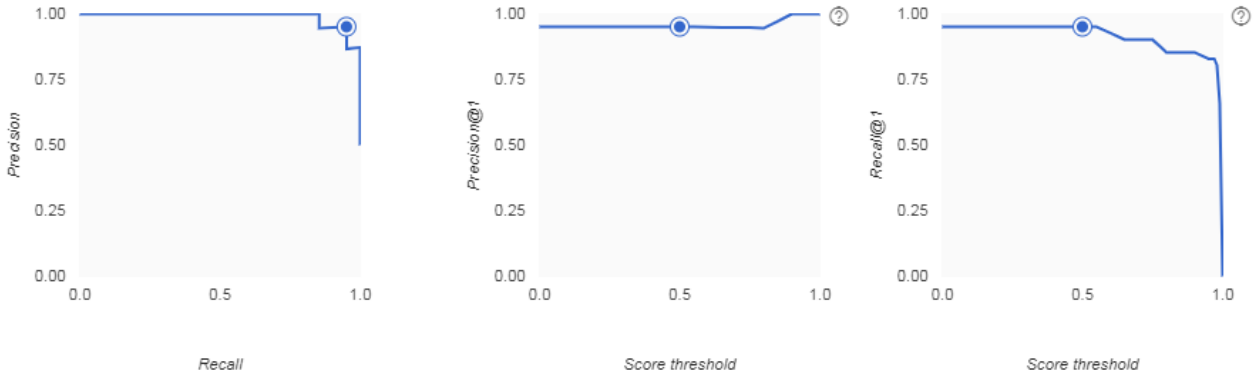
Type to filter labels...

- All labels
- normal _ 100
- pneumonia _ 300

All labels

Score threshold	0.50
Total images	400
Precision	95.1%
Recall	95.1%

Use the slider to see which score threshold works best for your model on the precision-recall tradeoff curve. Learn more about these metrics and graphs



Confusion matrix

This table shows how often the model classified each label correctly (in blue), and which labels were most often confused for that label (in orange).

True label	Predicted label: pneumonia _ 300	Predicted label: normal _ 100
pneumonia _ 300	94.1%	5.9%
normal _ 100	-	100.0%