

ML update - 8th Nov '18

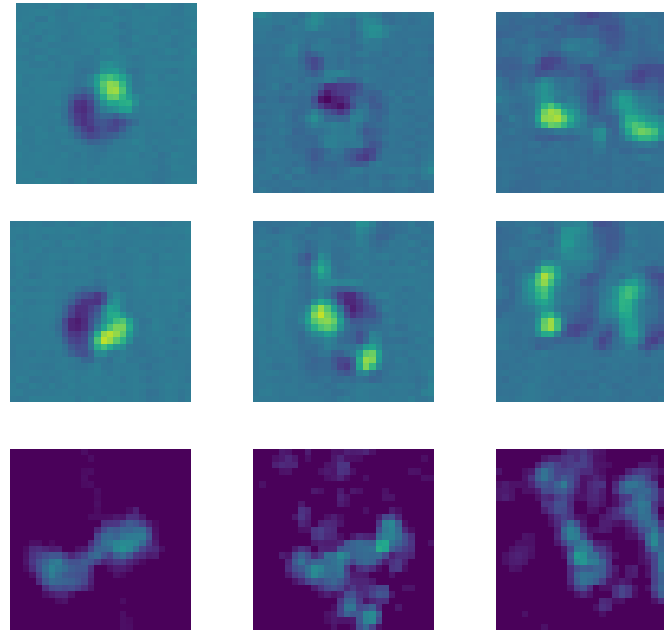
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DataSet

- Pits cropped (<30 pits per slide)
- 4 labels; t,b,c,m
- Will look at my missclassification rate in the 'misc' class
- 1/4th for validation

```
(1, 5, 2, 1, 5, 1, 1, 1, 1)
Total pits : 492
Total slides : 45
Total top : 296
Total bottom : 67
Total cross : 30
Total misc : 99
fraction top 0.60162601626
fraction bottom : 0.13617
fraction cross : 0.060975
fraction misc : 0.2012195
```

*Slide is the defacto term I'm using for a 640x480 Image and all its channels (raw + derived)
**Excludes Scratched / damaged / heavily clustered slides. Can go back to study these later



- Top surface pit
- 'dipole'/hip
- Clustered bottom surface

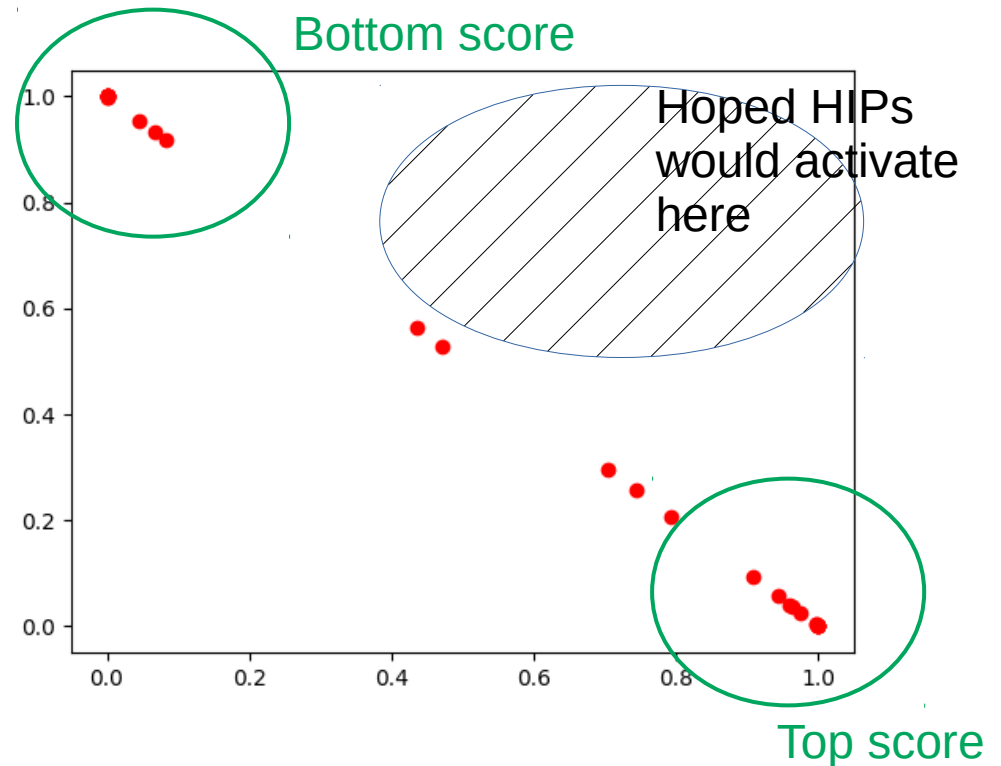
Network

- 1,2,3 layer 2d CNNs
- Top Vs Bottom
- 'Nominal' performance improves w. depth
- Range 80~99%

Upper limit strongly indicates overtraining / learning the dataset. $\Theta \gg N$

On otherhand problem is quite simple
Maybe it is trivial for NN

Look at training logs, validation performance, and predicted inference examples



- Ran as predictor on HIP candidate pits
- Hap hoped to see clustering in activation for Both Top and bottom scores

Summary

- Running network on 2d channels
- Labelled set of top and bottom surface holes
- Label is persistent for that pit
- Thus will later be able to compare 2d, and 3d convolution validation
- Accuracy increases with more layers (even if total weights decreases)
- Reducing size of dense layer (too much ability to 'learn' the dataset)