



deeplearning.ai

# Error Analysis

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Carrying out error  
analysis

# Look at dev examples to evaluate ideas

Say your classifier is taking a few Actual dog pictures & classifying them as Cats

The Problem



If model doesn't perform as well as human, then we can do error Analysis

- Say 90% accuracy is what you have, hope to get 99%

Solution

Build a // classifier that predicts dog pictures & plug into your original classifier  
⇒ If you know it's a dog then it's definitely not a cat! ⇒ ↑ in Accuracy

Should you try to make your cat classifier do better on dogs?

Error analysis:

- Get ~100 mislabeled dev set examples.
- Count up how many are dogs.

You can Aim to Improve model to 90.5%.  
At max if you build a // dog classifier  
Not worth it!

Say that's 5/100 Images

Count # examples (out of 100) where the Image was a dog, but was classified a cat

From your model's predictions get 100 mislabelled examples, where the model called an actual cat a dog, or an Actual dog a cat

But is it worth the effort?

How much will your Accuracy ↑ by?

would be good to find a ceiling Amount - If Accuracy becomes 96%, worth it, if 91%, maybe NOT

# Evaluate multiple ideas in parallel

Ideas for cat detection:

- Fix pictures of dogs being recognized as cats [As discussed last slide]
- Fix great cats (lions, panthers, etc..) being misrecognized
- Improve performance on blurry images

*Last slide contd*  
If # Images that were dogs but classified as cats is (50/100)  
then it would be worth while to build a // dog classifier  
as Accuracy goes from 90 → 95 %.

[This may be a bigger problem]  
(more frequent, than the dog  
misclassification)  
↳ so focus here  
instead?

| Image      | Dog problem | Greatcat problem | Blurry Image |
|------------|-------------|------------------|--------------|
| 1          | ✓           |                  |              |
| 2          |             | ✓                |              |
| 3          |             | ✓                | ✓            |
| ⋮          |             |                  |              |
| % of total | 8 %         | 43 %             | 51 %         |

100 Images

51 %

→ Focus on  
Blurry Images

For max ↑ in Accuracy Andrew Ng