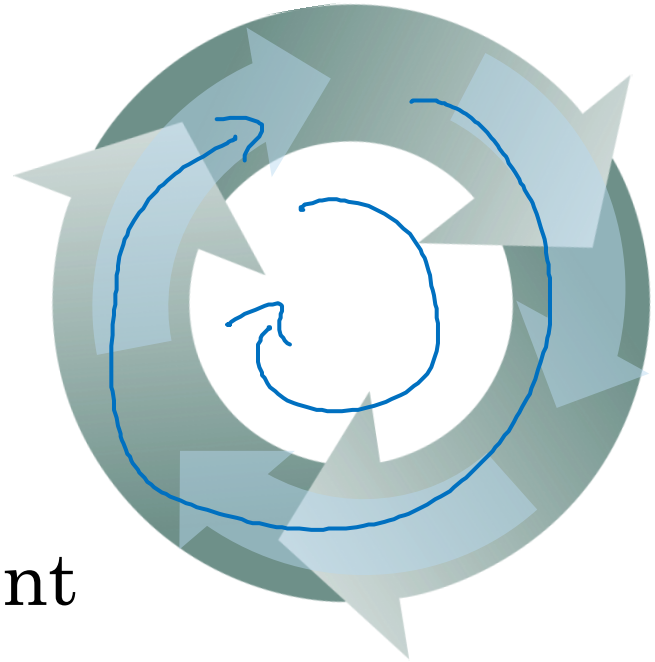
deeplearning.ai

Setting up your ML application

Train/dev/test sets

Applied ML is a highly iterative process

- # layers
- # hidden units
- learning rates
- activation functions
- ...

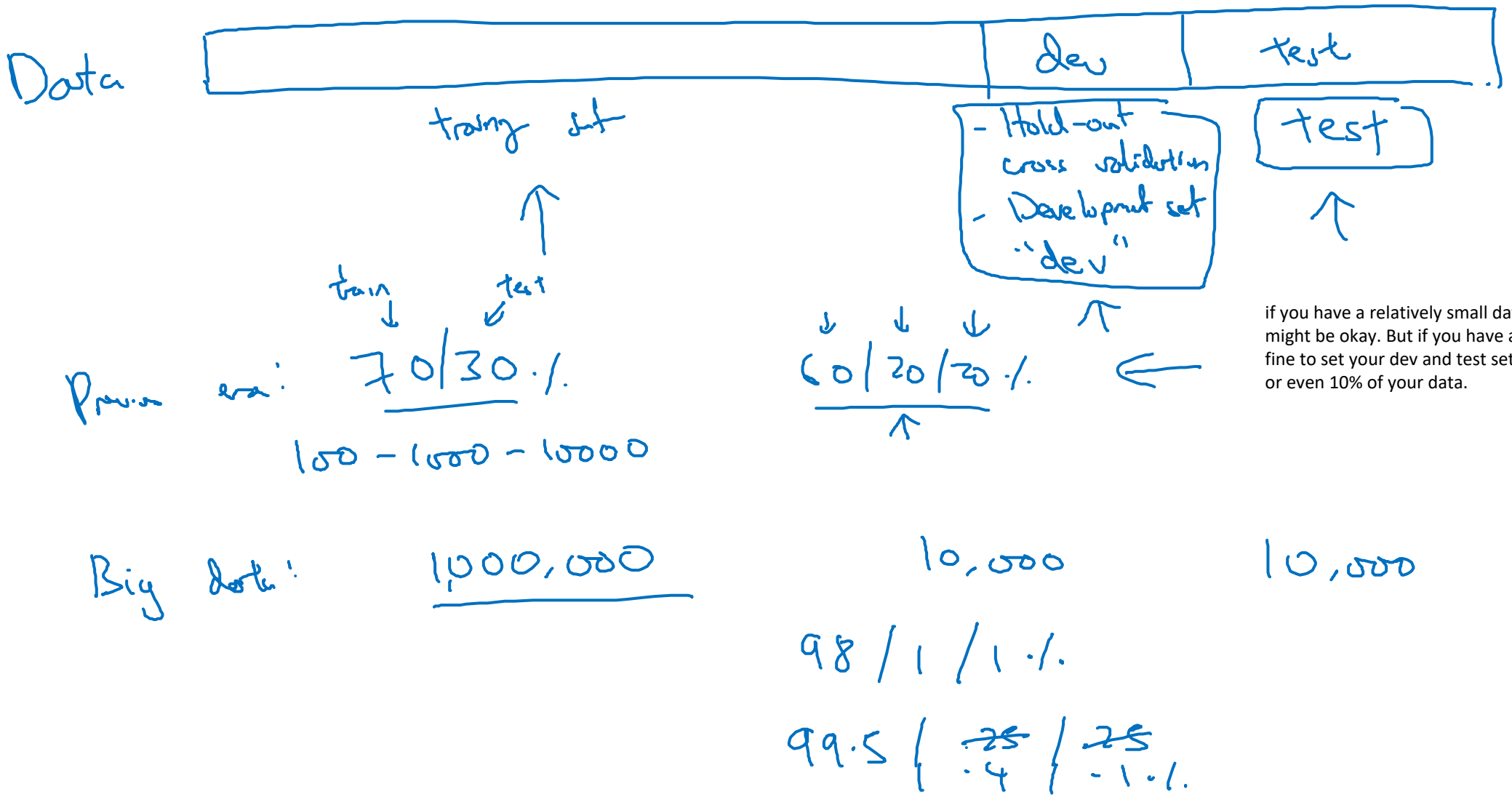


NLP, Vision, Speech, Structured data

Ads Search Security logistic ....

Train/dev/test sets

So the dev set just needs to be big enough for you to evaluate, say, two different algorithm choices or ten different algorithm choices and quickly decide which one is doing better. And you might not need a whole 20% of your data for that.



if you have a relatively small dataset, these traditional ratios might be okay. But if you have a much larger data set, it's also fine to set your dev and test sets to be much smaller that 20% or even 10% of your data.

Andrew Ng

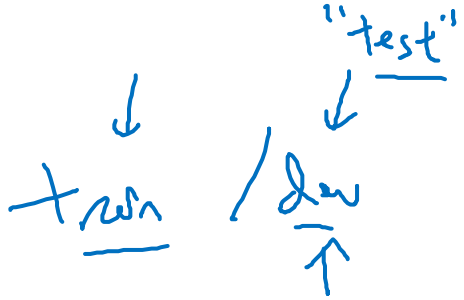
Mismatched train/test distribution

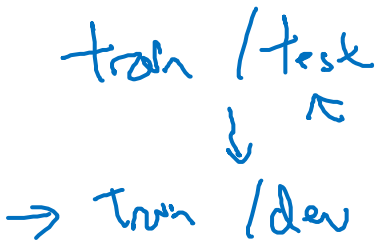
Cats

Training set:
Cat pictures from webpages

Dev/test sets:
Cat pictures from users using your app

→ Make sure dev and test come from same distribution.





But what they actually end up doing is using the test set as a hold-out cross validation set, which maybe isn't completely a great use of terminology,because they're overfitting to the test set.

Not having a test set might be okay. (Only dev set.)

The goal of the test set is to give you a unbiased estimate of the performance of your final network, of network that you selected. But if you don't need that unbiased estimate, then it might be OK to not have a test set.