



deeplearning.ai

Setting up your ML application

Train/dev/test sets

Applied ML is a highly iterative process

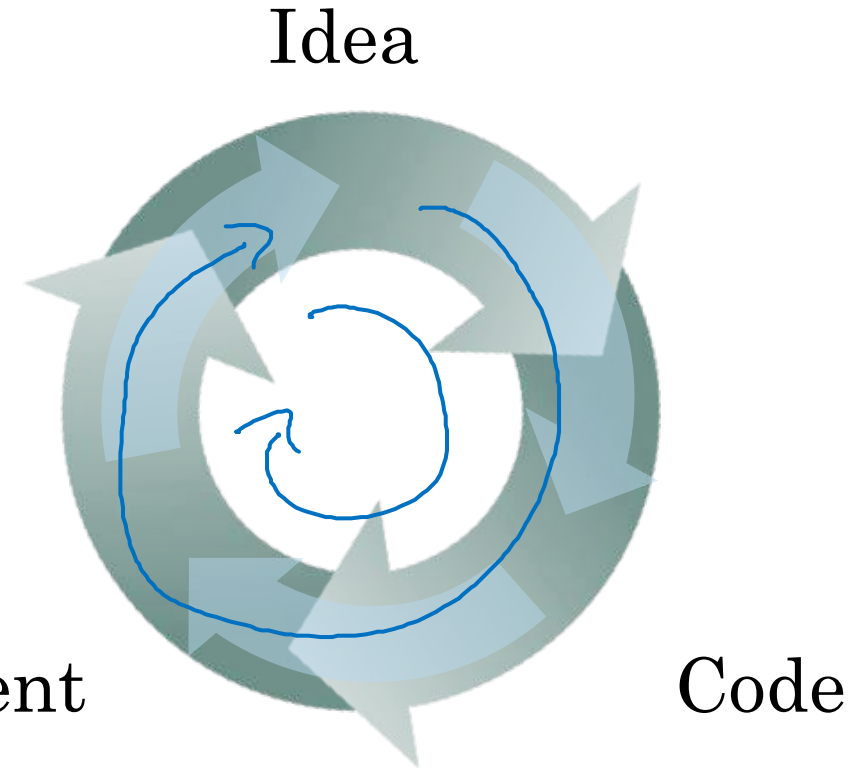
layers

hidden units

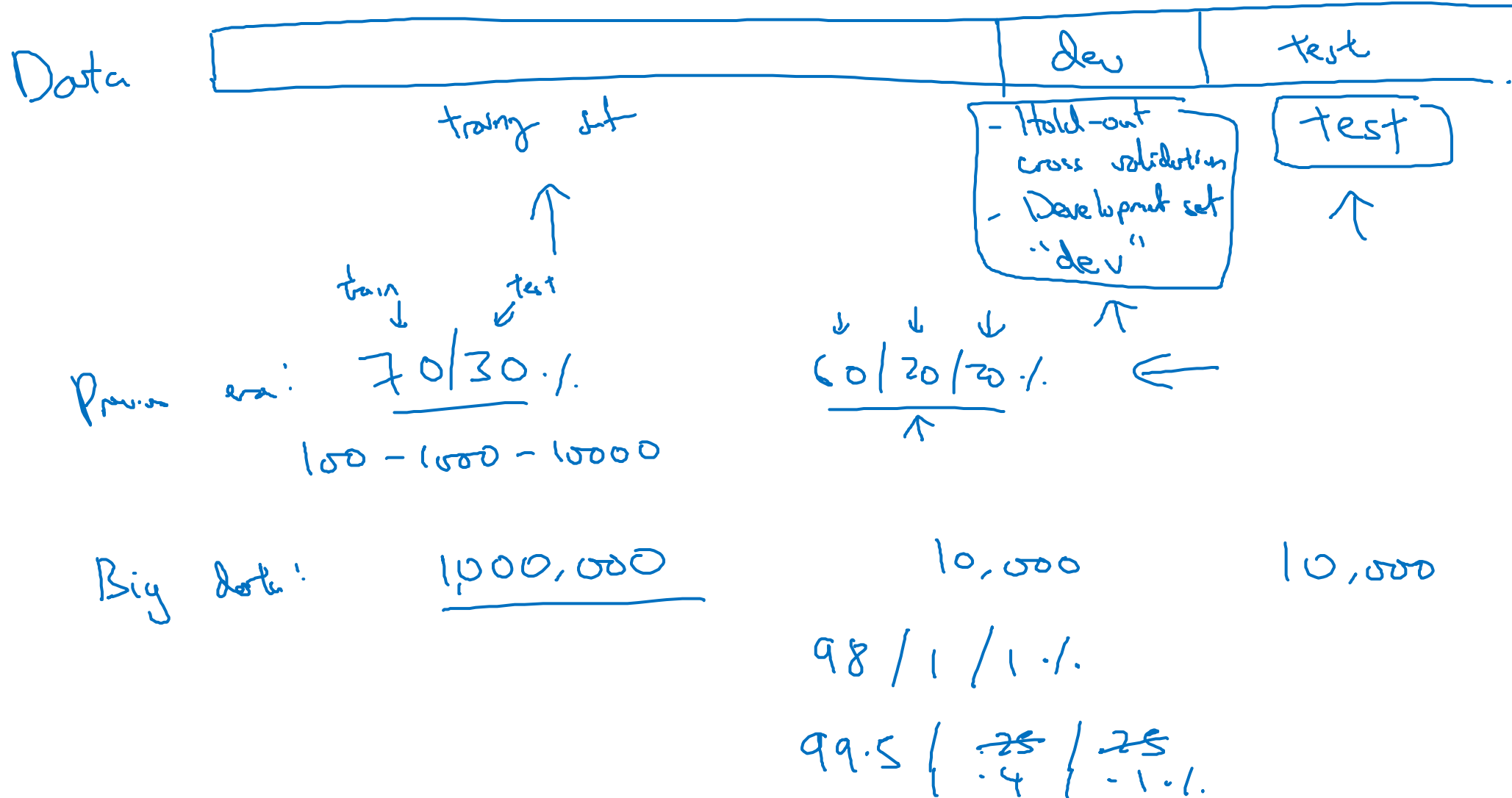
learning rates

activation functions

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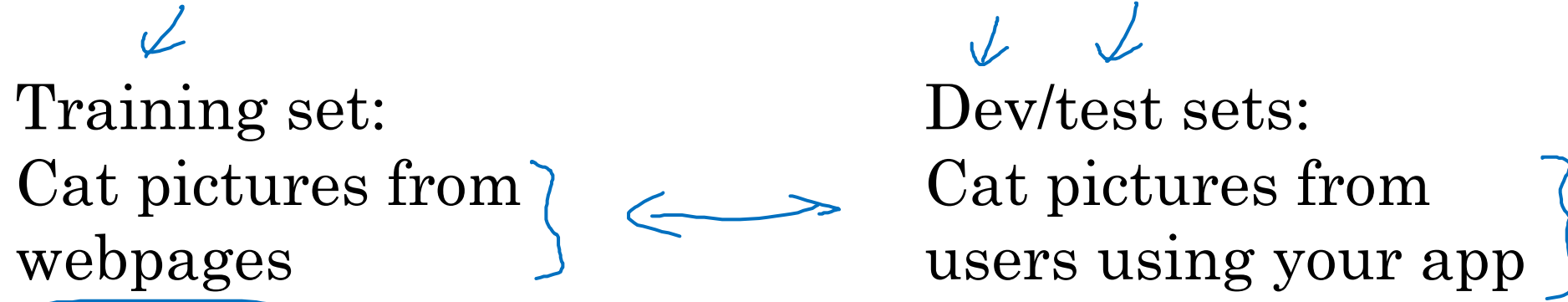
[illegible]

Train/dev/test sets

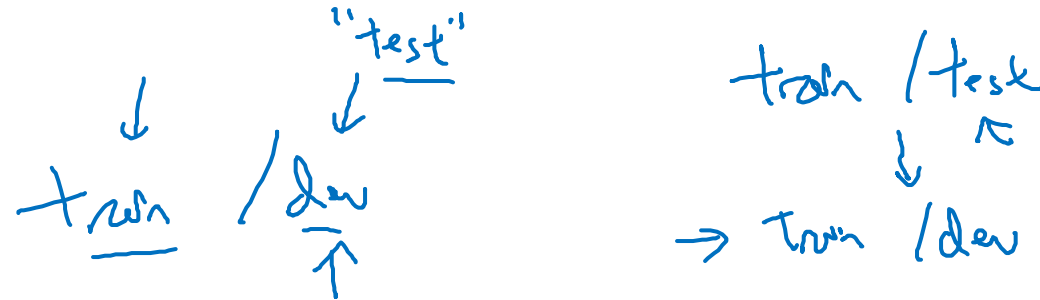


Mismatched train/test distribution

Certs



→ Make sure dev and test come from same distribution.



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

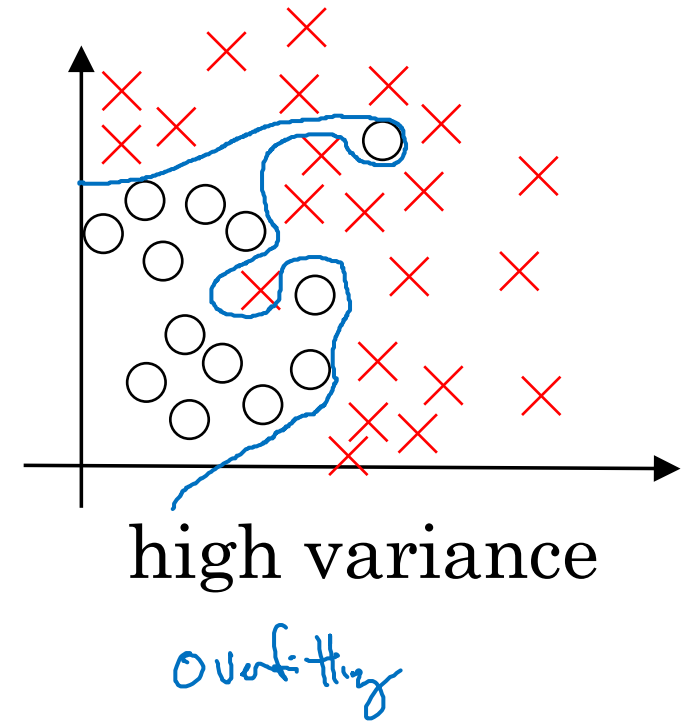
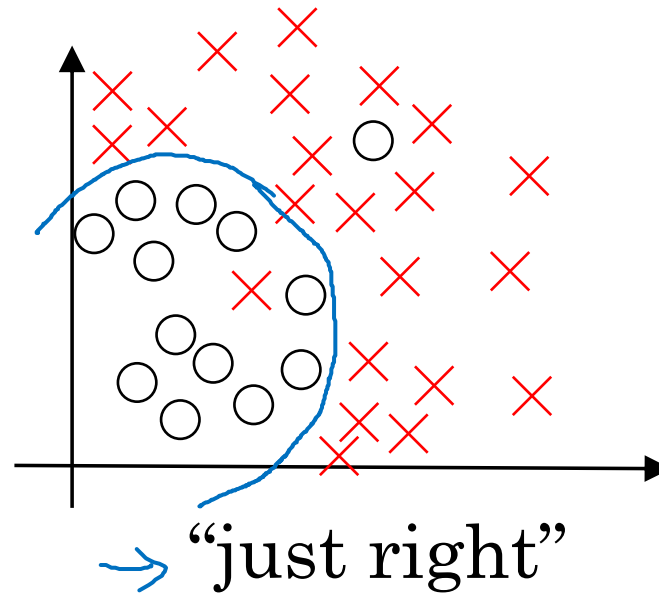
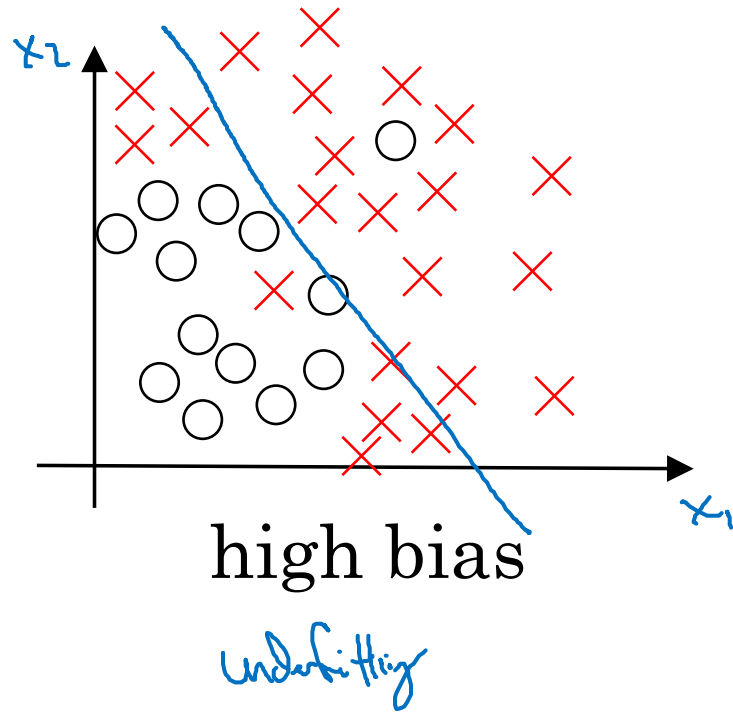


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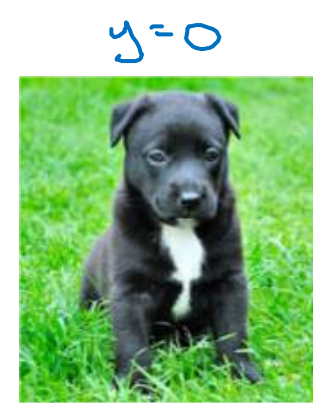
Bias/Variance

Bias and Variance



Bias and Variance

Cat classification



Train set error:

1%

15% \swarrow

15%

0.5%

Dev set error:

11%

16% \swarrow

30%

1%

high variance
 \uparrow

high bias
 \uparrow

high bias
& high variance

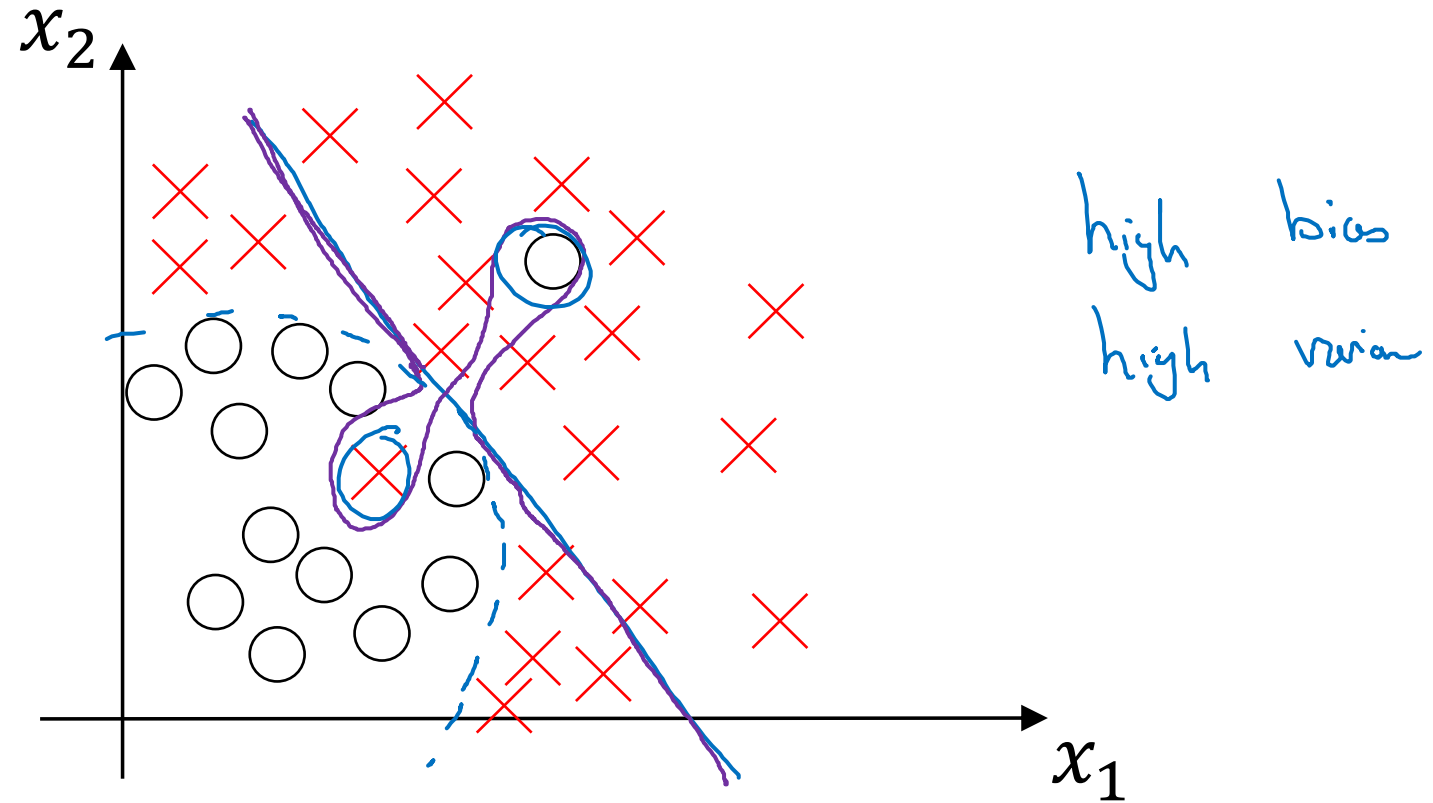
low bias
low variance
 \uparrow

Human: ~0%

Optimal (Bayes) error: ~~~0%~~ 15%

Blurry images

High bias and high variance





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Setting up your ML application

Basic “recipe” for machine learning

Basic recipe for machine learning

