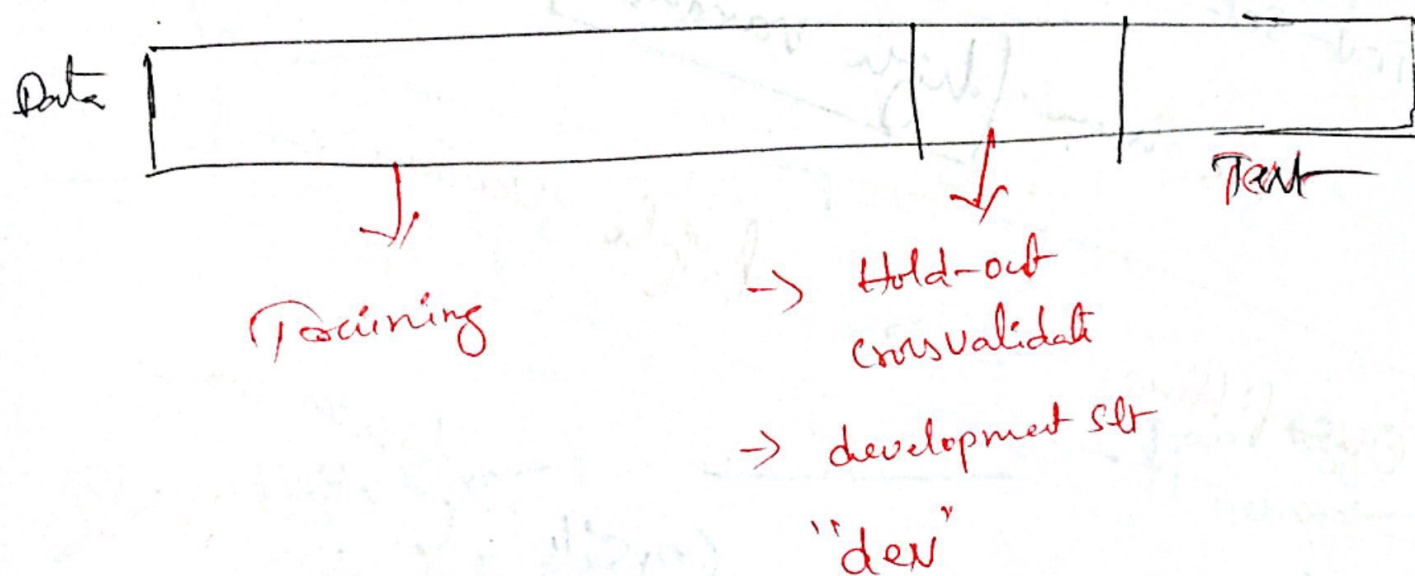


Course

Improving Deep Neural Networks: Hyperparameter tuning, regularization & optimization

Train/dev/test sets



Note: MISMATCHED TRAIN/DEV/TEST Distribution

Training set:

Cat pictures from
webpage

Dev/Test set:

Cat pictures from
users using your app

⇒ Be sure that the Dev and Test set come from same distribution as your Training set

Bias | Variance

In Classification

Train set error: 1%
Test set error: 11% } overfitting
we have high variance

overfitting → high variance

Case 2

Train set error: 15%
Dev / test error: 16% } high on train + underfitting
It is high bias

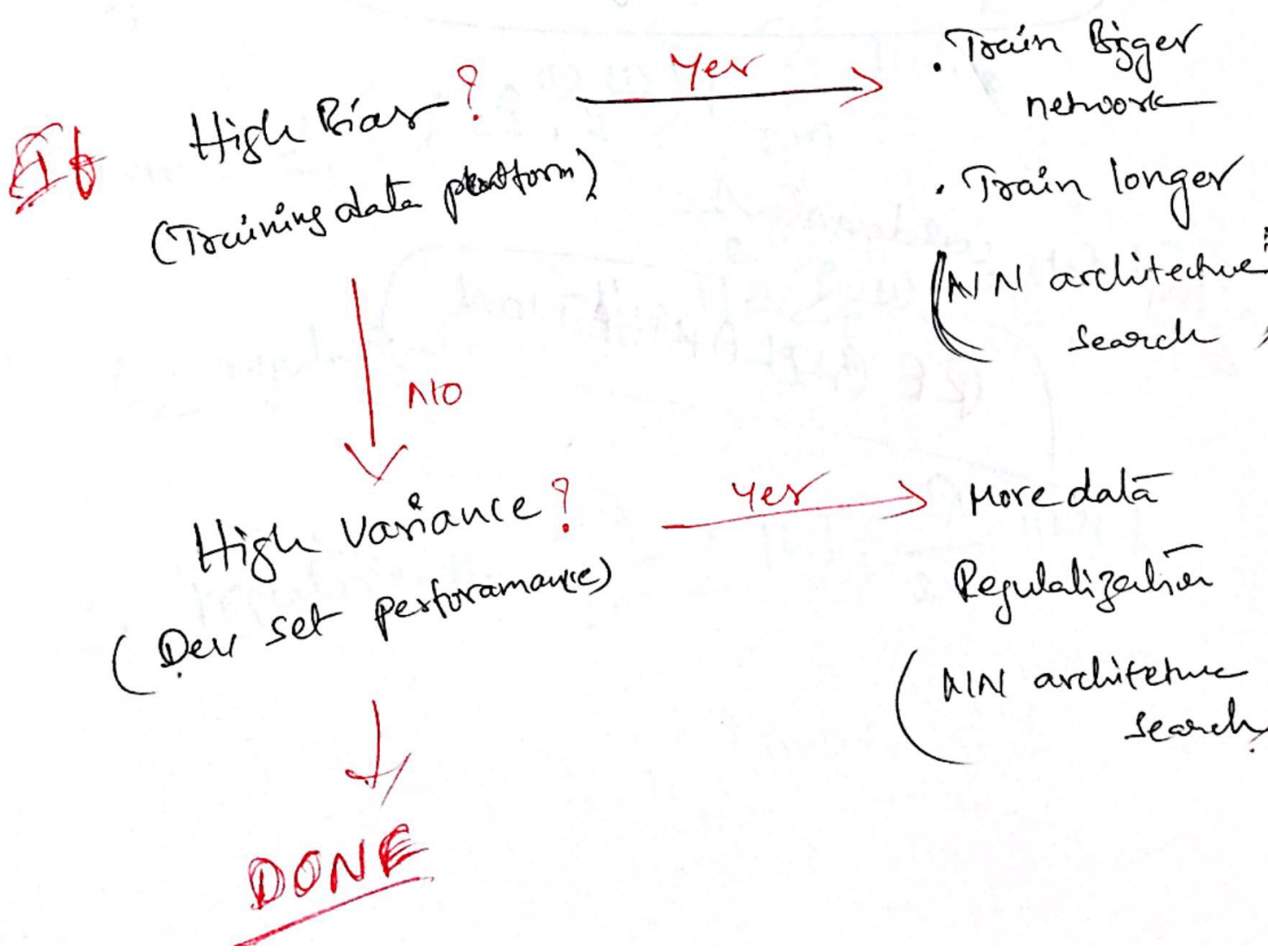
Underfitting → high bias

Case ③

Train Set error 0.5%
Test Set error 1%

low Bias, low variance ✓

Basic recipe for Machine Learning



Note
In Deep learning we can address
"Bias Variance Trade off"

⇒ with having "Bigger Network" ⇒
Reduce Bias

~

⇒ having "more data" ⇒ Reduce Variance
without hurting cash out

Imp to understand

REGULARIZATION