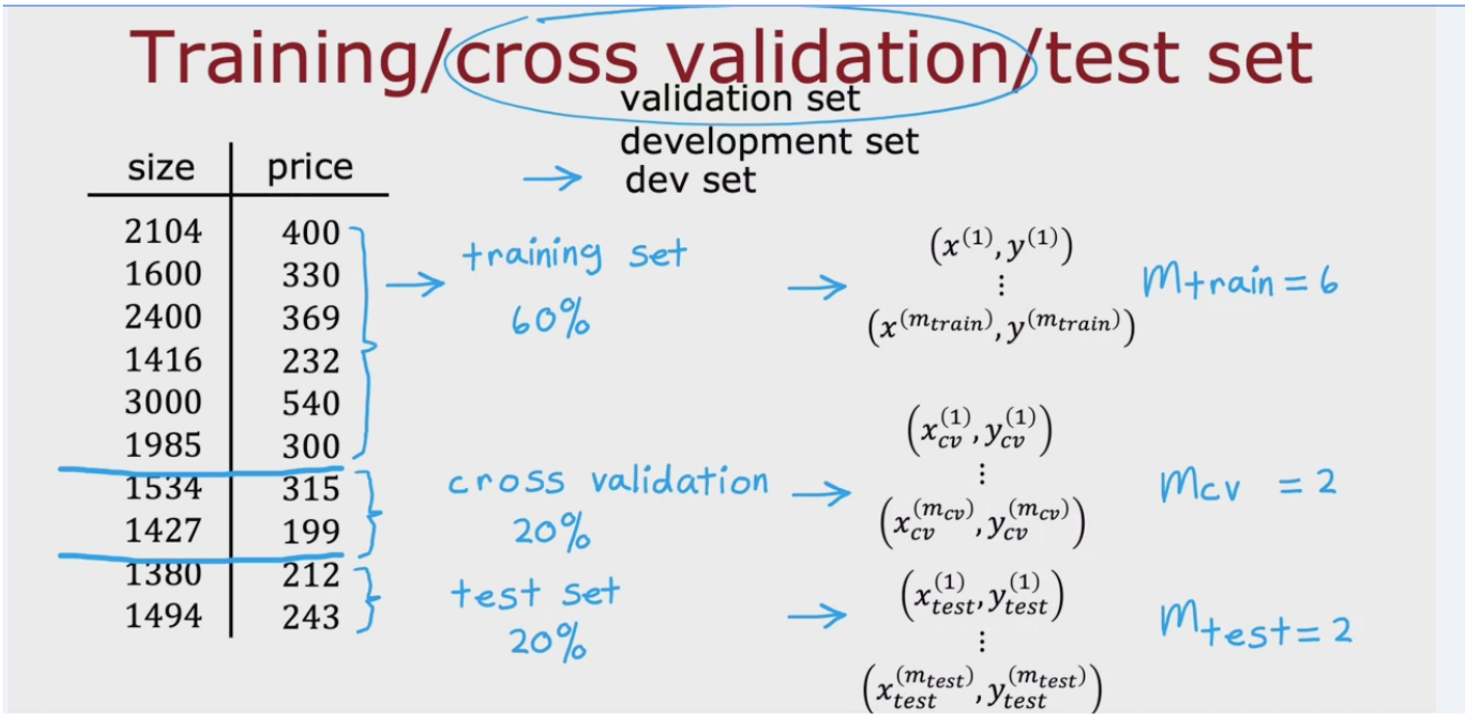
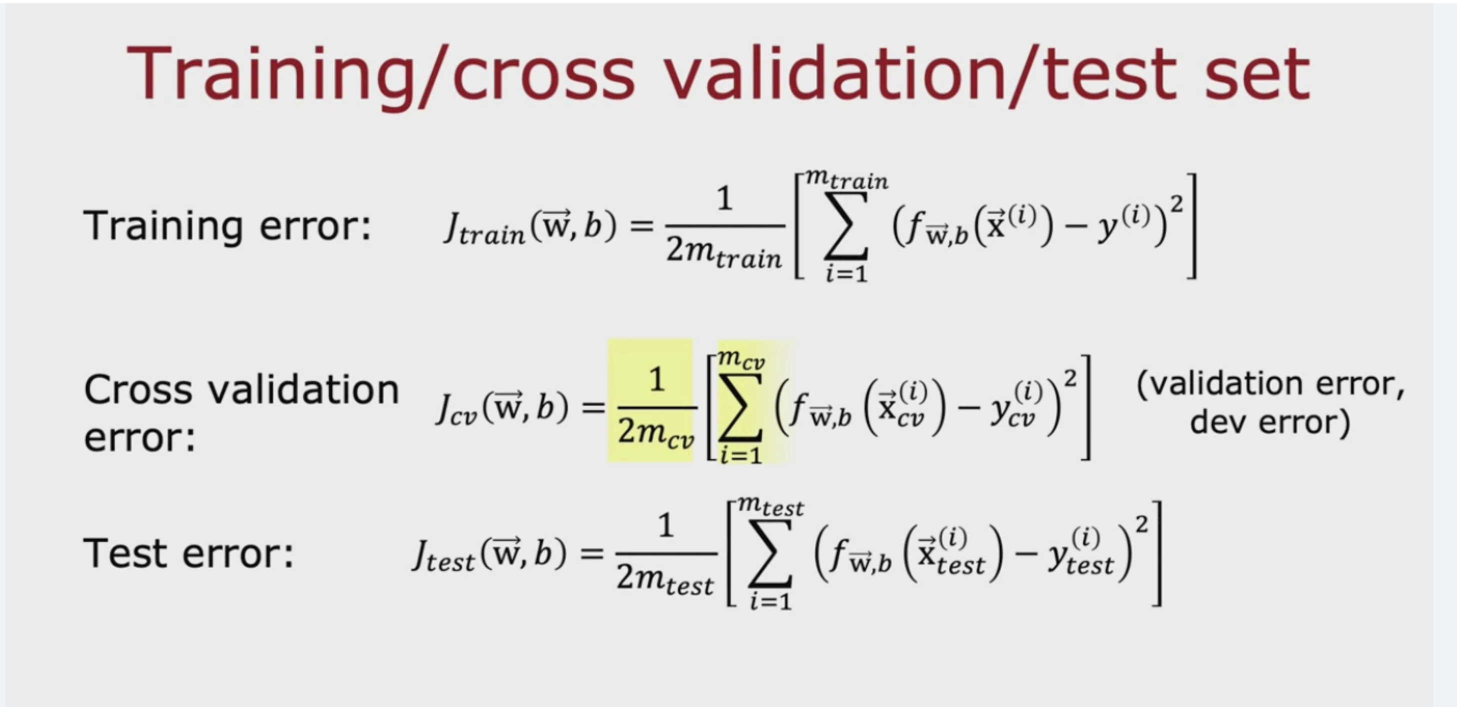
Advanced Learning Algorithms - Week 3

ML Diagnostics:
Valiadtion / Test:

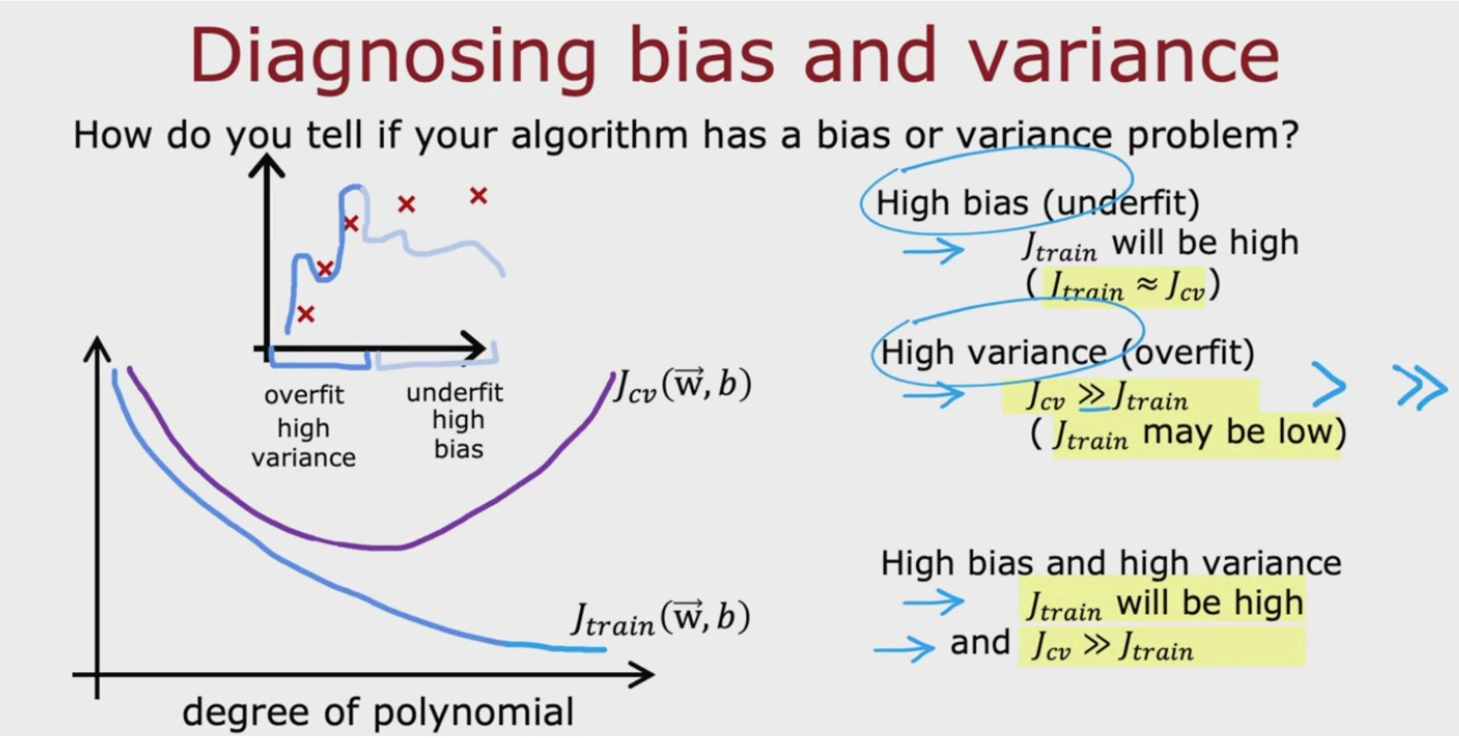


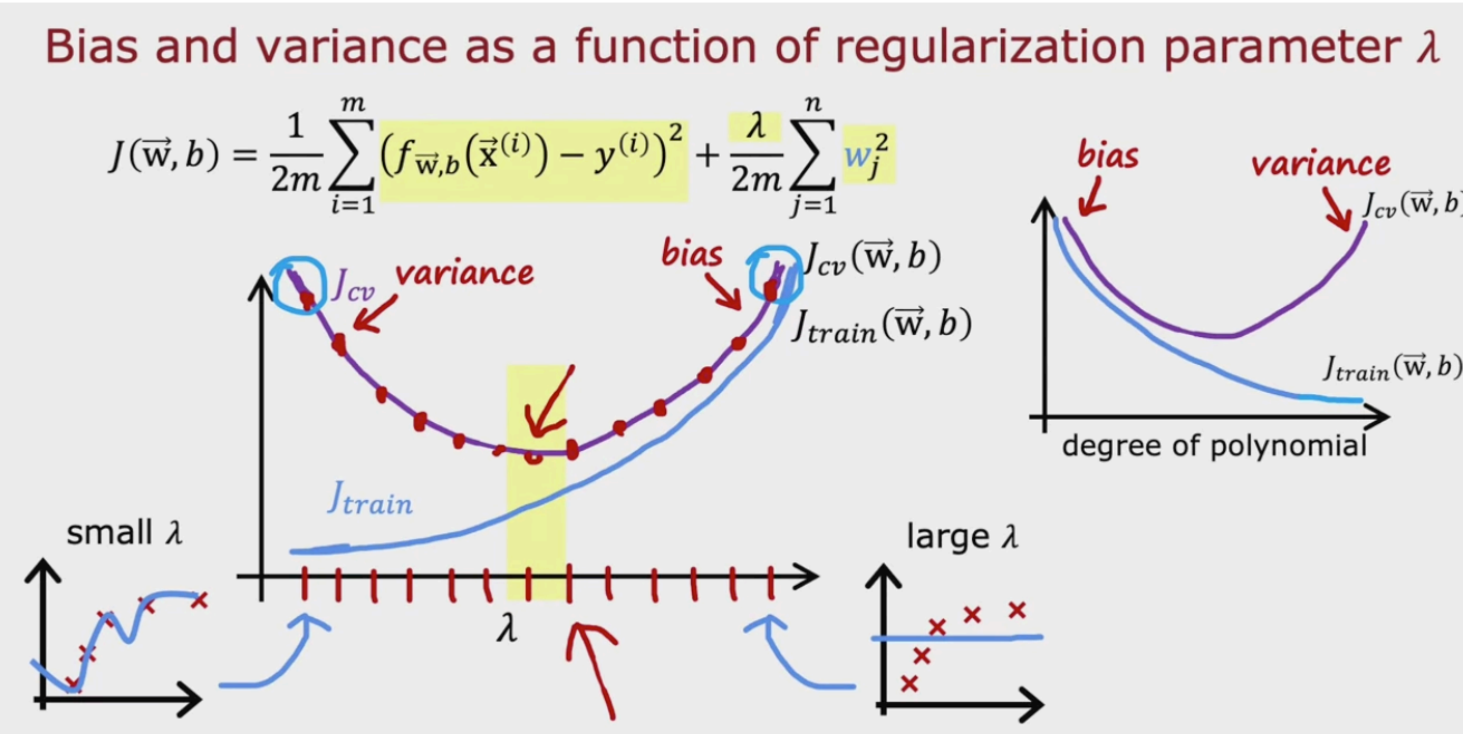


The ***cross validation*** set is used to evaluate different models during training to choose the best one, while the test set is typically reserved for final evaluation after the model has been selected.

High Bias - Underfit
High Variance - Overfit

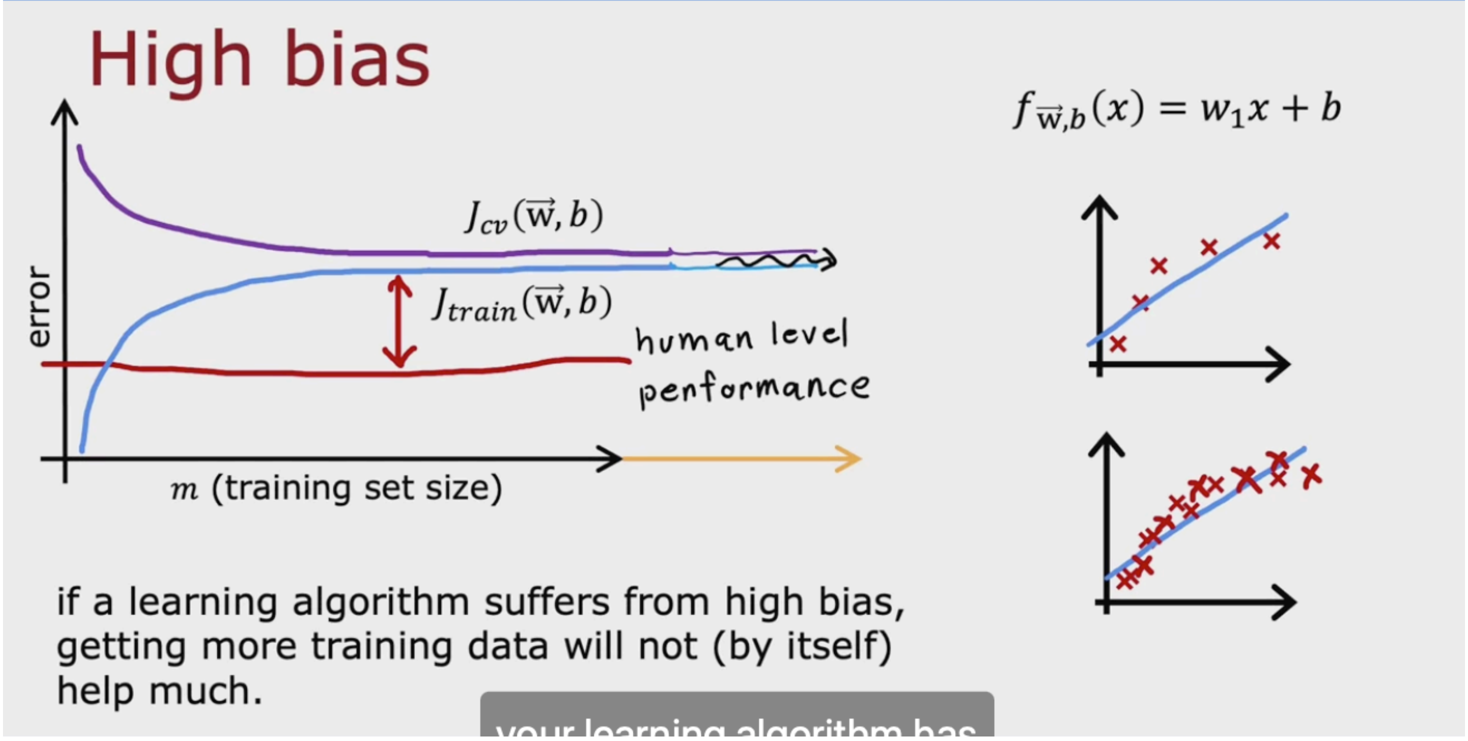
Both Jtrain and Jcv should be low - how a better model performs.



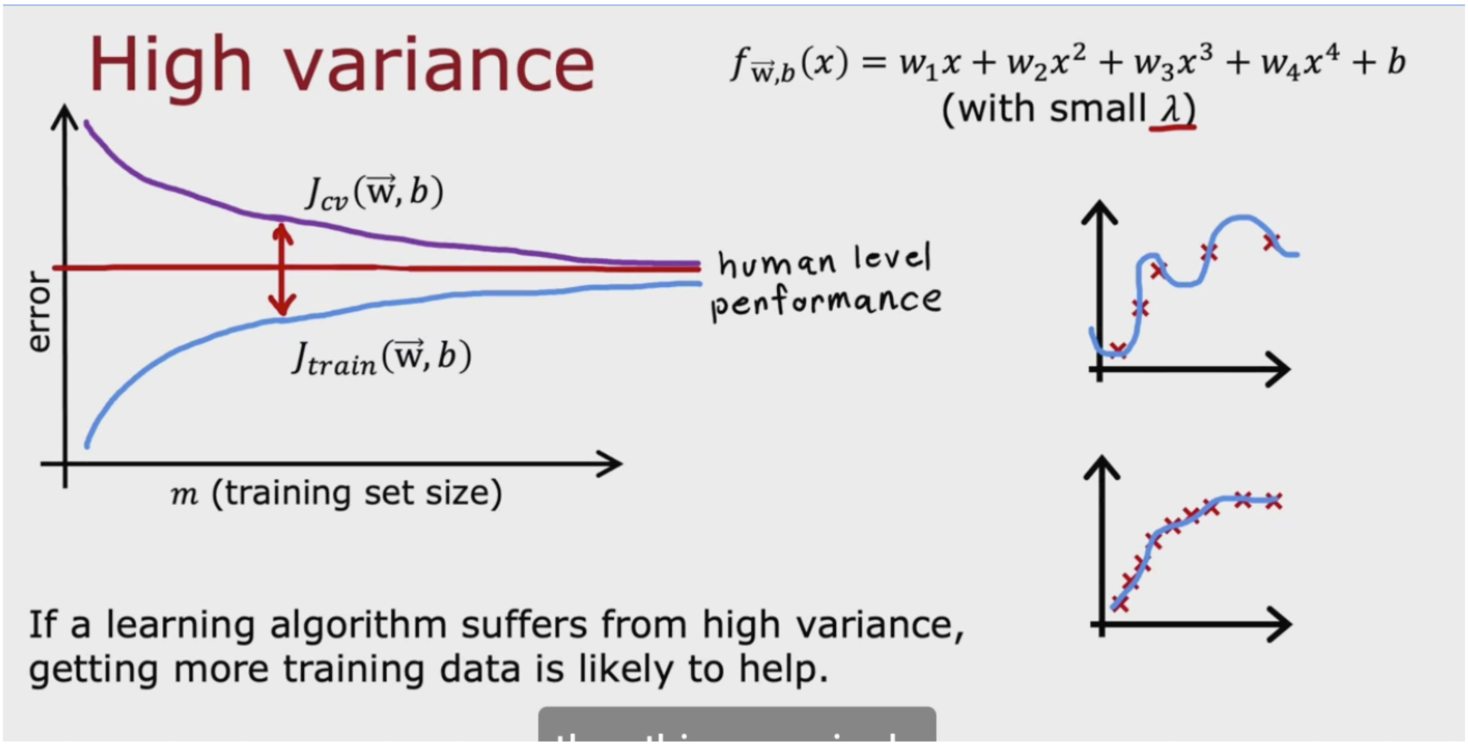


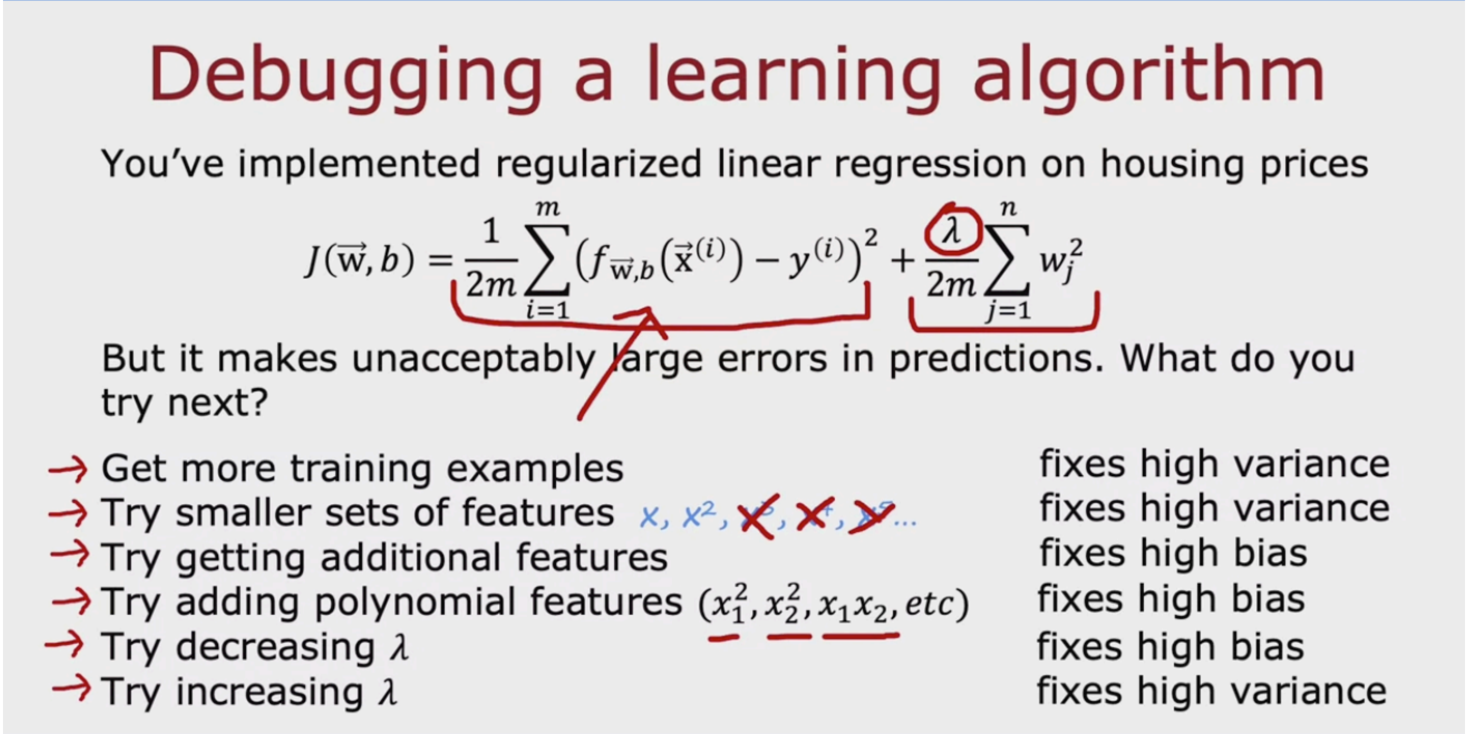
Gap between the baseline performance & training error tells you if you have high bias.

Gap between training error & cross validation error tells you if you have high variance.



When high bias - throwing more training data generally does not help.



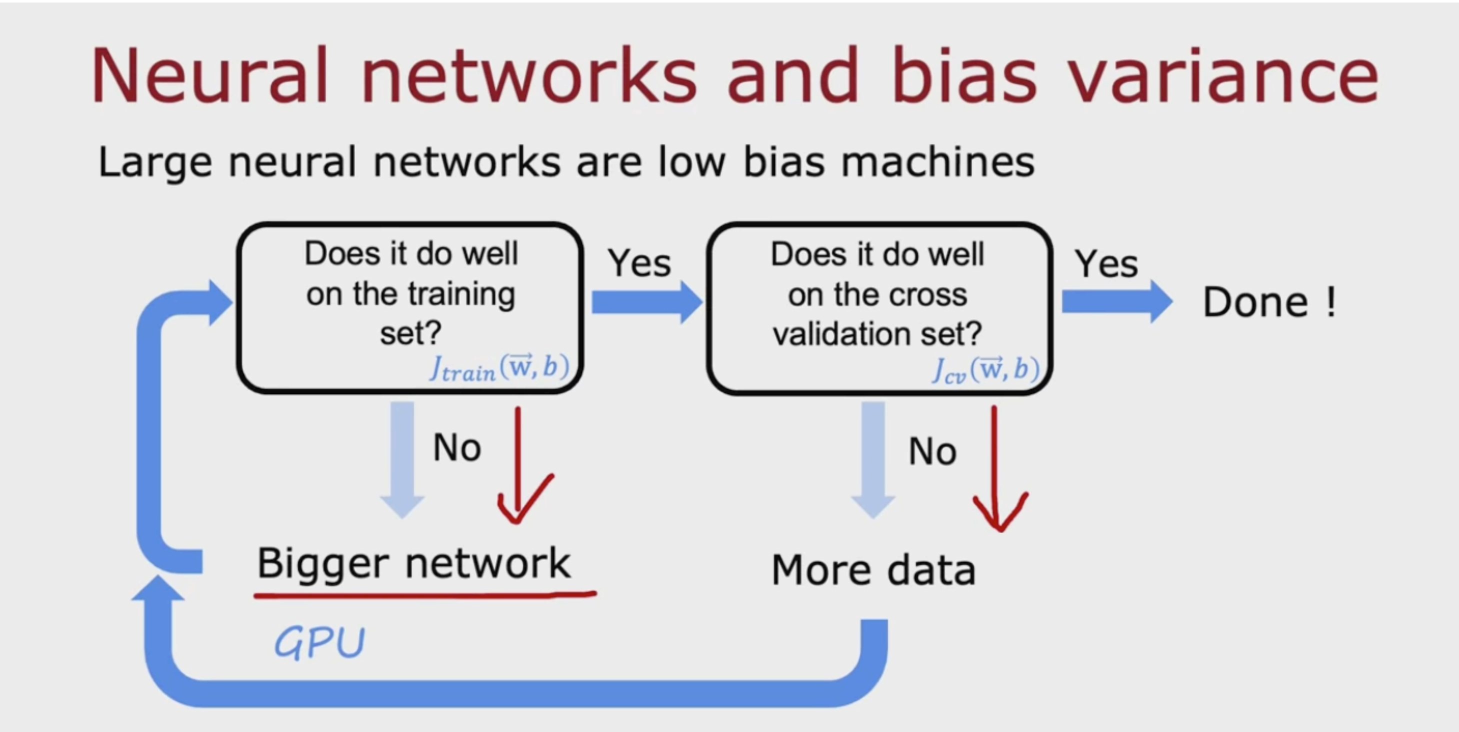


Tradeoff between bias and variance

Simple model - high bias

Complex model - high variance

Large neural networks are low bias machines.



Machine Learning Development Process

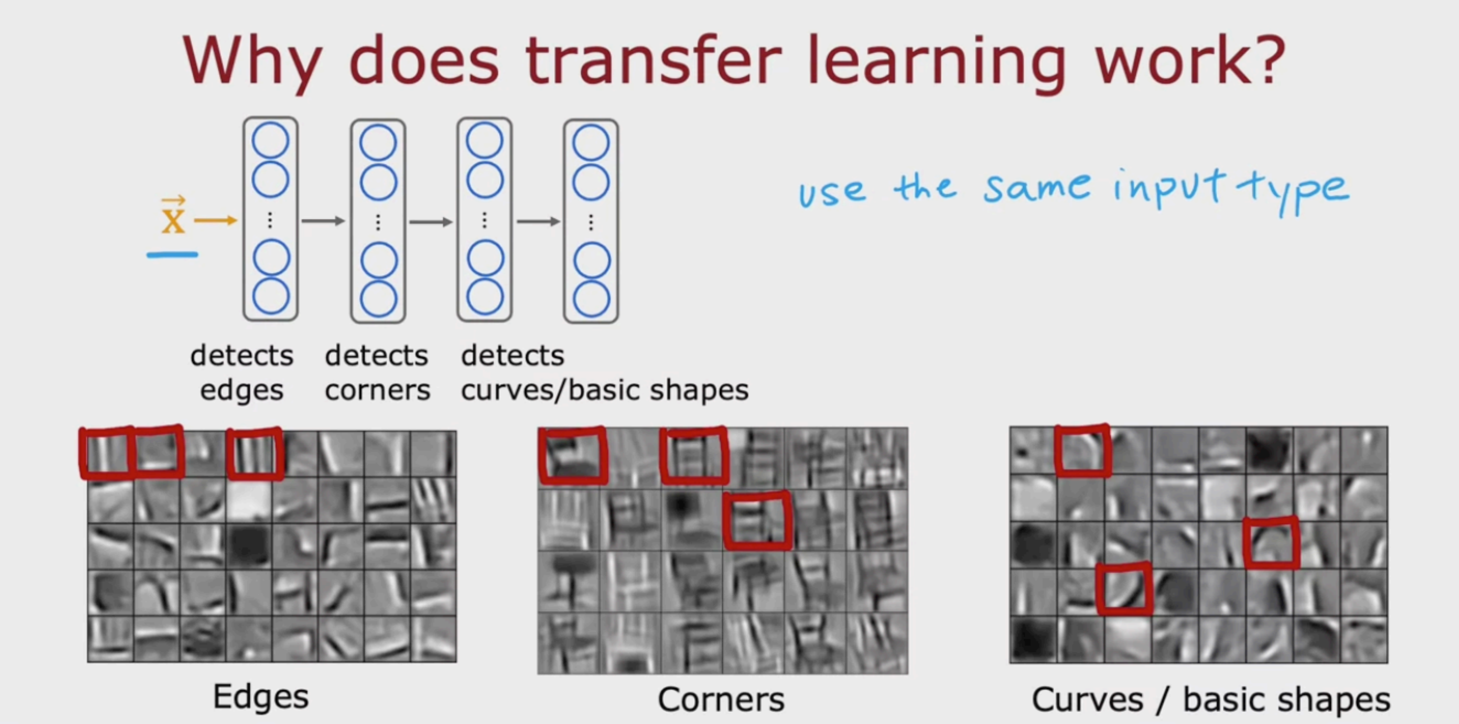
Choose Architecture -> Train -> Diagnostics

Data Augmentation:

Letter A - symmetric - distortion - color change - rotation - combination (noises)

Transfer Learning:

Copying levels



1- download a neural network - trained with a large dataset - in your application

2- further train (finetune) the network on your data.