Siguiente

✓ Volver a la semana 6

× Lecciones

3 min

11 min

3 min

11 min

3 min

# Evaluating a Learning Algorithm

### Bias vs. Variance

0	Diagnosing Bias vs.	7 min
	Variance	

- Diagnosing Bias vs.
  Variance
- Regularization and
  Bias/Variance
- Regularization and Bias/Variance
- Learning Curves
- Learning Curves
- Deciding What to Do Next
  Revisited
- Deciding What to do Next
  Revisited 3 m

### Review

**Building a Spam Classifier** 

**Handling Skewed Data** 

**Using Large Data Sets** 

Review

## Deciding What to Do Next Revisited

Our decision process can be broken down as follows:

• Getting more training examples: Fixes high variance

Trying smaller sets of features: Fixes high variance

Adding features: Fixes high bias

Adding polynomial features: Fixes high bias

• Decreasing λ: Fixes high bias

Increasing λ: Fixes high variance.

### **Diagnosing Neural Networks**

- A neural network with fewer parameters is prone to underfitting. It is also computationally cheaper.
- A large neural network with more parameters is prone to overfitting. It is also computationally expensive. In this
  case you can use regularization (increase λ) to address the overfitting.

Using a single hidden layer is a good starting default. You can train your neural network on a number of hidden layers using your cross validation set. You can then select the one that performs best.

### Model Complexity Effects:

- Lower-order polynomials (low model complexity) have high bias and low variance. In this case, the model fits poorly
  consistently.
- Higher-order polynomials (high model complexity) fit the training data extremely well and the test data extremely poorly. These have low bias on the training data, but very high variance.
- In reality, we would want to choose a model somewhere in between, that can generalize well but also fits the data reasonably well.

Marcar como completo





