Coursera- Machine Learning
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Summary

Supervised learning

- linear regression, logistic regression, neural network, SVMs

Unsupervised learning

- k-means, PCA, Anomaly detection

Special applications/special topics

- Recommender systems, large scale machine learning

Advice for building a machine learning system

- bias/variance, regularization, deciding what to work next, evaluation of a learning algorithm, learning curves, error analysis, ceiling analysis

Week 1

Intro
Definition of ML

- A program learns from experience (E) w.r.t task(T) and performance measure (P) if its performance on T improves with more E.

- With supervised learning, we know what our answers are as a relation of input and output. But with unsupervised learning, we have little idea about the result.

Cost function

- $$h_\theta(x) = \theta_0 + \theta_1 x$$

  our goal is to minimize the cost function, which is calculated as square error

$$\min_{\theta_0,\theta_1} J(\theta_0, \theta_1)$$

- where the error function is defined as

$$J(\theta_0, \theta_1) = \frac{1}{2m} \sum (h_\theta(x^{(i)} - y^{(i)})^2)$$

Linear regression

repeat until converge{

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