Machine Learning Course

Unit 1:

* Supervised learning requires labeled datasets
* Attempting to find continuous outputs, such as predicting the weather, requires a regression.
* Attempting to classify an input, such as an predicting if order wait times are under five or over ten minutes, we would use a classification algorithm.

Supervised Vs. Unsupervised

Supervised:

When we explicitly tell a program what we expect the output to be, and let it learn the rules that produce expected outputs from given inputs, we are performing supervised learning.

Unsupervised:

Snacks are usually a piece of fruit or a handful of nuts. No one explicitly *told* you what kinds of foods go with each meal, but you learned from natural observation and put the patterns together. In unsupervised learning, we don't tell the program anything about what we expect the output to be. The program itself analyzes the data it encounters and tries to pick out patterns and group the data in meaningful ways.

* Supervised Learning: data is labeled and the program learns to predict the output from the input data
* Unsupervised Learning: data is unlabeled and the program learns to recognize the inherent structure in the input data

REGRESSION Vs. CLASSIFICATION

Regression is used to predict outputs which are continuous.

Classification is used to predict a discrete label. (binary)

Multi-label classification is when there are multiple possible outcomes. We use models like Naïve Bayes, K-Nearest Neighbors, and SVMs.