What is Machine Learning?

One possible definition of Machine Learning comes from Kevin P. Murphy's *Machine Learning: A Probabilistic Perspective*: a set of methods that can automatically *detect patterns* in data, and then use the uncovered patterns to *predict future data*, or to perform other kinds of decision making *under uncertainty*

There are three key aspects in a machine learning task:

- Data, typically collected from past observations. This is known as the *training data.*

- Modeling, designed to capture the patterns in the data. There is often some Human Intelligence involved in deciding how to model a particular set of data.

- Prediction, in which we use the model to forecast.