Machine Learning

1. Definition:

Machine learning is “Field of study that gives computer the ability to learn without being explicitly programmed”

1. Algorithms:

* Supervised learning
* Unsupervised learning

Reinforcement learning

Practical advice for applying learning algorithms

1. Exploring Algorithms:
2. Supervised learning: knowing the exactly what input is (labeled)

X ---------------------> Y

Input Output Label

Learns from being given “right answers”

* Regression: predict a number infinitely many possible outputs
* Classification: predict categories small number of possible outputs

1. Unsupervised learning: not knowing the exactly what input is (be unlabeled)

* Takes data without labels and tries to automatically group them into clusters
* Clustering: Group similar data points together
  + Example: Google News
* Dimensionality reduction: Compress data using fewer numbers
* Anomaly detection: Find unusual data points