**Types of Machine Learning**

**3 Main Types:**

1. Supervised
2. Unsupervised
3. Reinforcement

**Supervised:**

* Uses labeled training data (known differences)
* Examples
  + Spam classifier
    - Text filter + client filter
    - Blacklisting
  + Fingerprint analysis
  + Regression (linear and logistic)

**Unsupervised:**

* No labeled data (unknown differences)
* Machine by itself figures out patterns and clusters
  + Very useful for creating weights and prioritization
* Examples
  + Voice recognition (especially in personal assistants)
  + Netflix Recommendation (+ YouTube, App Store, etc.)

**Reinforcement**

* Agent
  + An object that can interact with the environment in a predictable way
  + First observes, then selects action using some policy. Action → rewarded or penalty
* Environment
  + Based on how the agent performs, the environment determines reward or penalty
* The policy is updated, and this process is iterated many times
* Similar to “evolution”
* Example
  + Pavlov’s dogs
  + Self-driving cars