- ✓ **Machine Learning Algorithms:**
- ✓ **Categories of these Machine Learning algorithms**
- ✓ **Supervised machine learning algorithms**
- ✓ **Unsupervised learning algorithms**
- ✓ **Reinforcement Learning algorithms**

Machine Learning Algorithms:

In a world where nearly all manual tasks are being automated, the definition of manual is changing. Machine Learning algorithms can help computers play chess, perform surgeries, and get smarter and more personal.

We are living in an era of constant technological progress, and looking at how computing has advanced over the years, we can predict what's to come in the days ahead.

One of the main features of this revolutions that stands out is how computing tools and techniques have been democratized. In the past five years, data scientists have built sophisticated data-crunching machines by seamlessly executing advanced techniques. The results have been astounding.

Machine Learning Algorithms:

There is a distinct list of Machine Learning Algorithms. The method of how and when you should be using them. By learning about the List of Machine Learning Algorithm you learn furthermore about AI and designing Machine Learning System.

The Machine Learning Algorithm list includes:

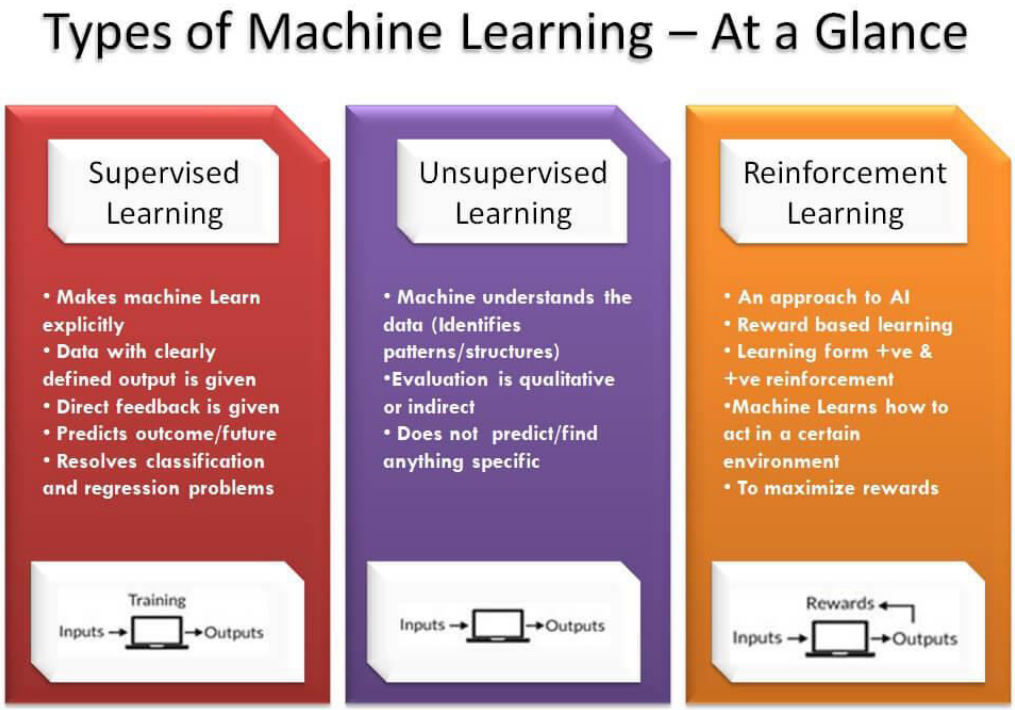
1. **Linear Regression**
2. **Logistic Regression**
3. **Support Vector Machines**
4. **Random Forest**
5. **Naïve Bayes Classification**
6. Ordinary Least Square Regression
7. **K-means**
8. Ensemble Methods
9. Apriori Algorithm
10. **Principal Component Analysis**
11. Singular Value Decomposition
12. Reinforcement or Semi-Supervised Machine Learning
13. Independent Component Analysis
14. **KNN (K- Nearest Neighbors)**

Machine learning algorithms can be divided into 3 broad categories — supervised learning, unsupervised learning, and reinforcement learning.Supervised learning is useful in cases where a property (*label*) is available for a certain dataset (*training set*), but is missing and

needs to be predicted for other instances. Unsupervised learning is useful in cases where the challenge is to discover implicit relationships in a given *unlabeled* dataset (items are not pre-assigned). Reinforcement learning falls between these 2 extremes — there is some form of feedback available for each predictive step or action, but no precise label or error message.

Categories of these Machine Learning algorithms are:

- **Supervised Learning**
- **Unsupervised Learning**
- **Reinforcement Learning**



Supervised machine learning algorithms

- ✓ Decision Trees
- ✓ Naive Bayes Classification
- ✓ Support vector machines for classification problems
- ✓ Random forest for classification and regression problems
- ✓ Linear regression for regression problems
- ✓ Ordinary Least Squares Regression
- ✓ Logistic Regression
- ✓ Ensemble Methods

Unsupervised learning algorithms are:

- ✓ K-means for clustering problems
- ✓ Apriori algorithm for association rule learning problems
- ✓ Principal Component Analysis
- ✓ Singular Value Decomposition
- ✓ Independent Component Analysis

Reinforcement Learning algorithms are

- ✓ **Q-Learning**
- ✓ **SARSA- State-Action-Reward-State-Action (SARSA)**
- ✓ **DQN- Deep Q Network**
- ✓ **DDPG- Deep Deterministic Policy Gradient (DDPG)**