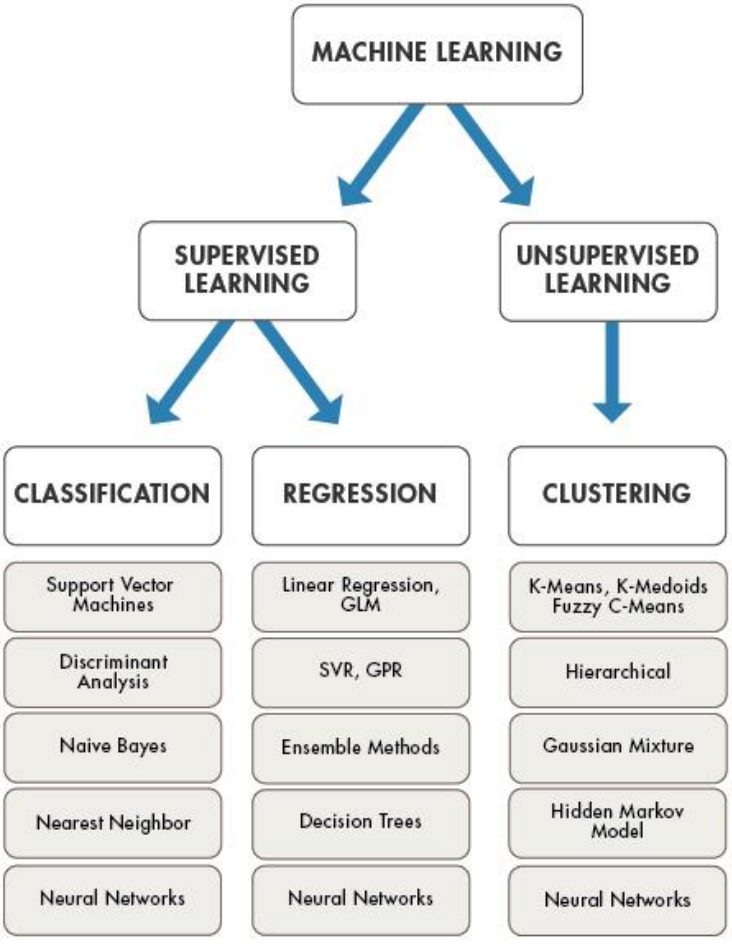
Machine Learning

- Machine learning (ML) is a type of artificial intelligence (AI).
- It provides computers with the ability to learn without being explicitly programmed.
- ML centers on the development of Computer Programs that can alter when exposed to new data.
- Python community has developed numerous modules to aid developers implement ML.
- ML is a large field of study that overlaps with and inherits ideas from many related fields such as artificial intelligence (AI).
- The focus of the field is learning - acquiring skills or knowledge from experience. This means synthesizing useful concepts from historical data.

Machine learning is categorized into three types:

1. Supervised Learning – Train Me!
2. Unsupervised Learning – I am self-sufficient in learning.
3. Reinforcement Learning – My life My rules! (Hit & Trial)



The following is a list of most commonly ML libraries you need to install:

- *scikit-learn***:** machine learning
- *scipy***:** scientific and technical computing
- *numpy***:** for any work with matrices, especially math operations
- *pandas***:** data handling, manipulation, and analysis
- *matplotlib***:** data visualization

Other ML libraries to consider installing:

- *theano*: evaluate and optimize mathematical expressions involving multi-dimensional arrays in an efficient manner
- *tensorflow*: for high performance, numerical computation
- *keras*: It is a high-level neural networks API capable of running on top of TensorFlow, CNTK (Microsoft Cognitive ToolKit), or Theano
- *torch*: (Sometimes referred to as PyTorch) It has an extensive choice of tools and libraries that supports on Computer Vision, Natural Language Processing(NLP) and many more ML programs.