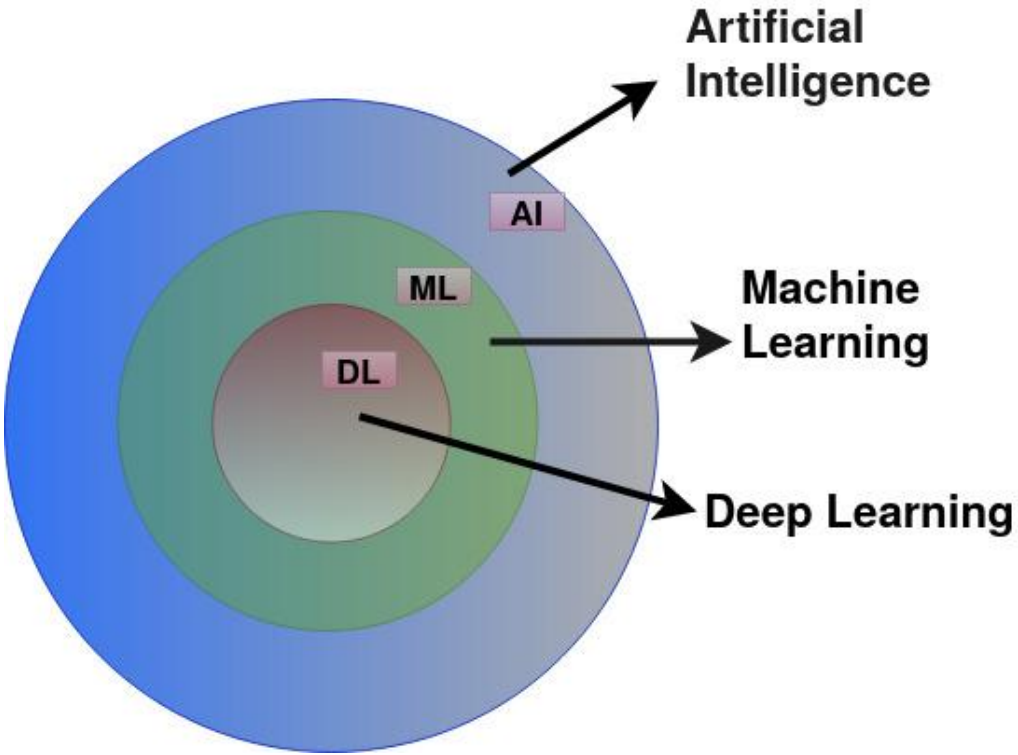
Artificial Intelligence

Artificial Intelligence

AI -- refers to the simulation of human intelligence in machines that are programmed to think like humans and mimic their actions.

AI vs ML vs DL


Artificial
Intelligence
AI
ML
DL
Machine
Learning
Deep Learning

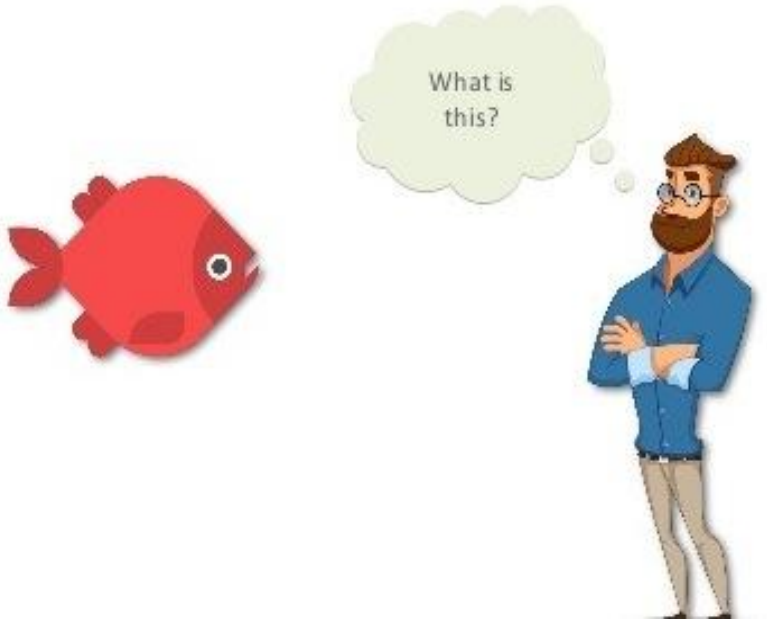
Machine Learning

What is Machine Learning?

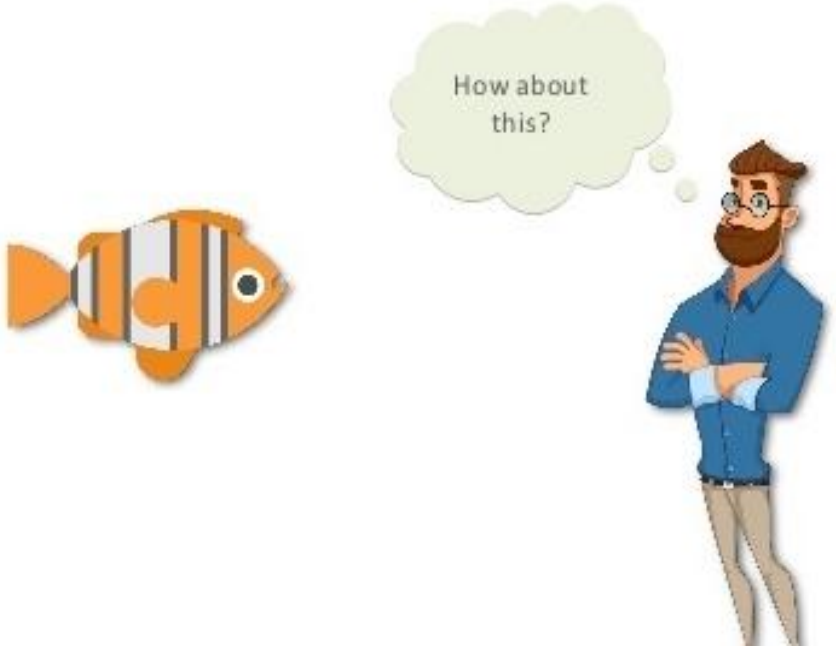
- **Machine Learning** is a type of Artificial Intelligence(AI) that provides computers with the ability to learn without being explicitly programmed. Machine Learning focuses on the development of computer programs that can change when exposed to new data.

Understanding Machine Learning

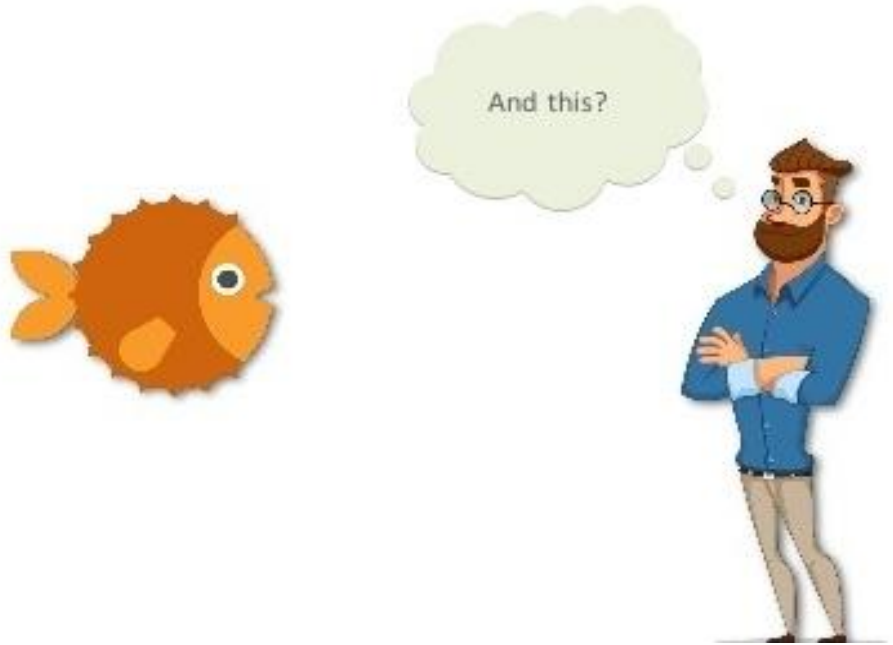
Understanding Machine Learning



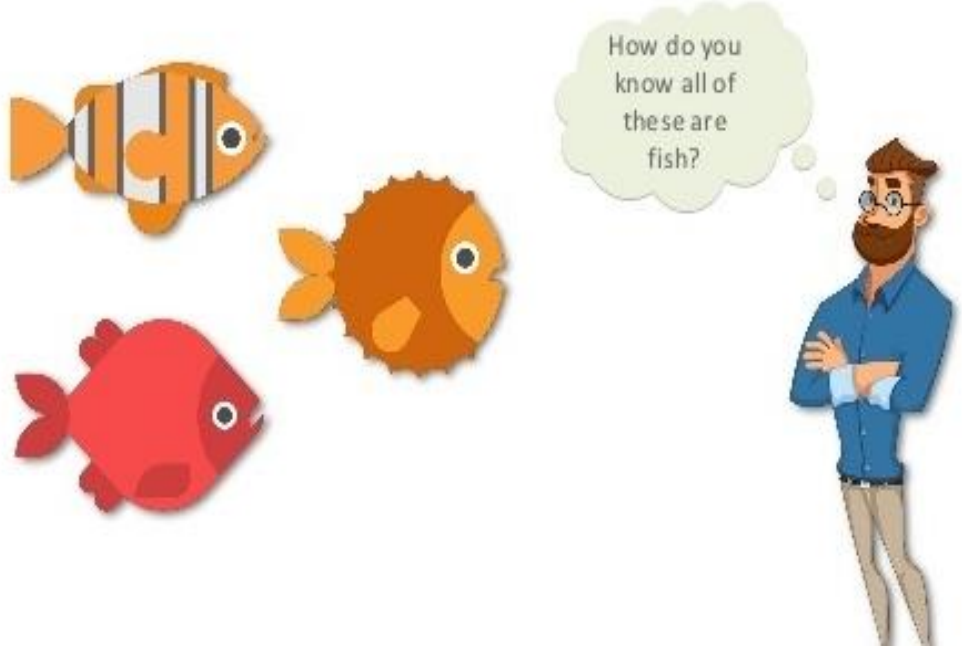
Understanding Machine Learning



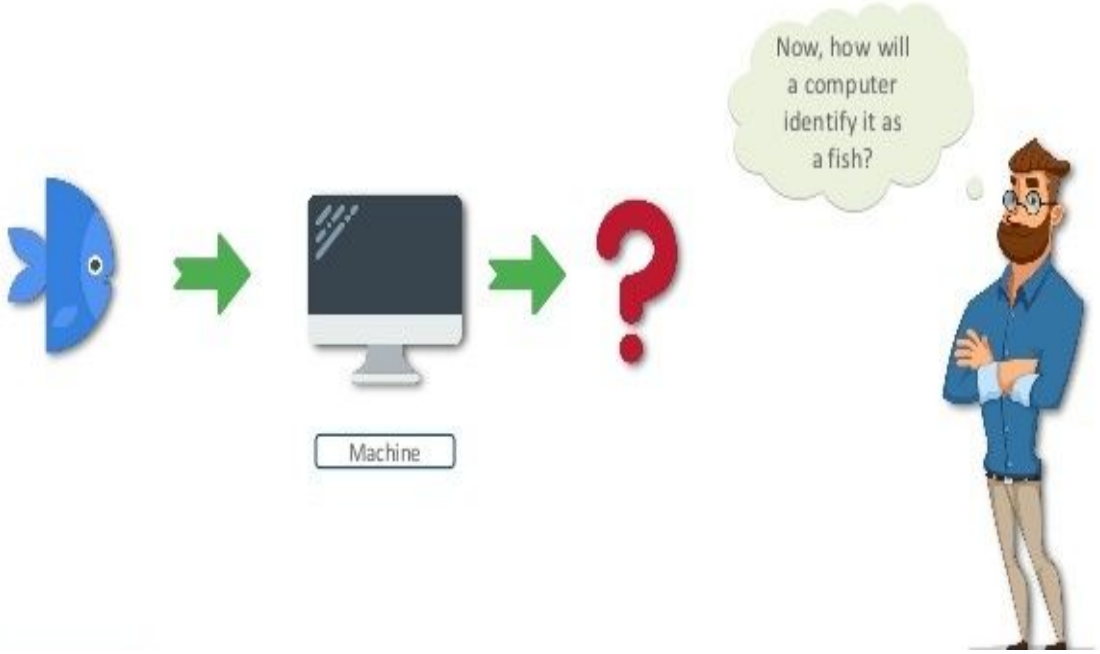
Understanding Machine Learning



Understanding Machine Learning



Understanding Machine Learning



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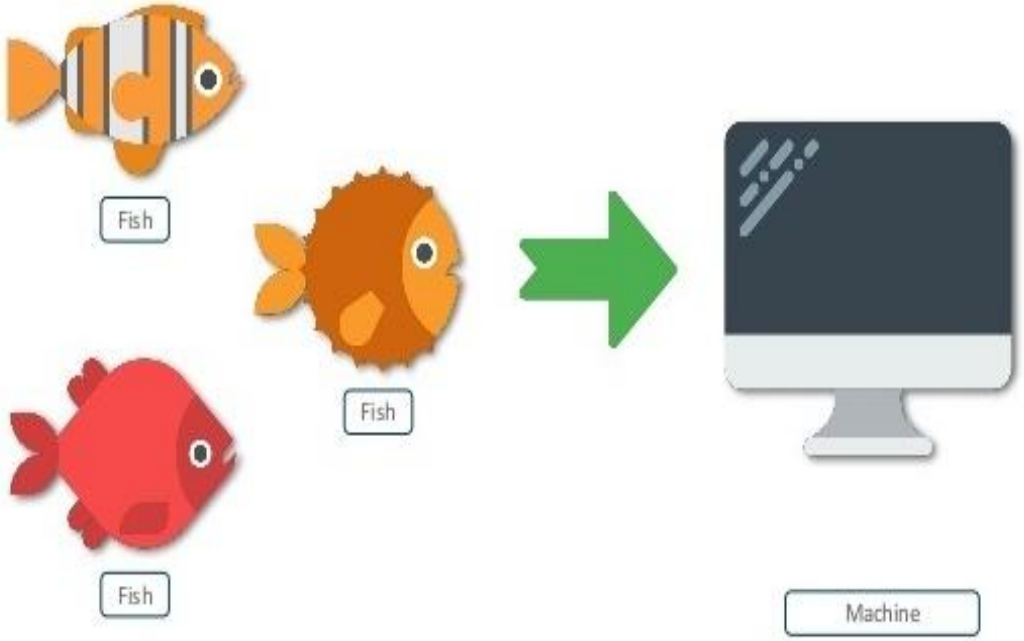
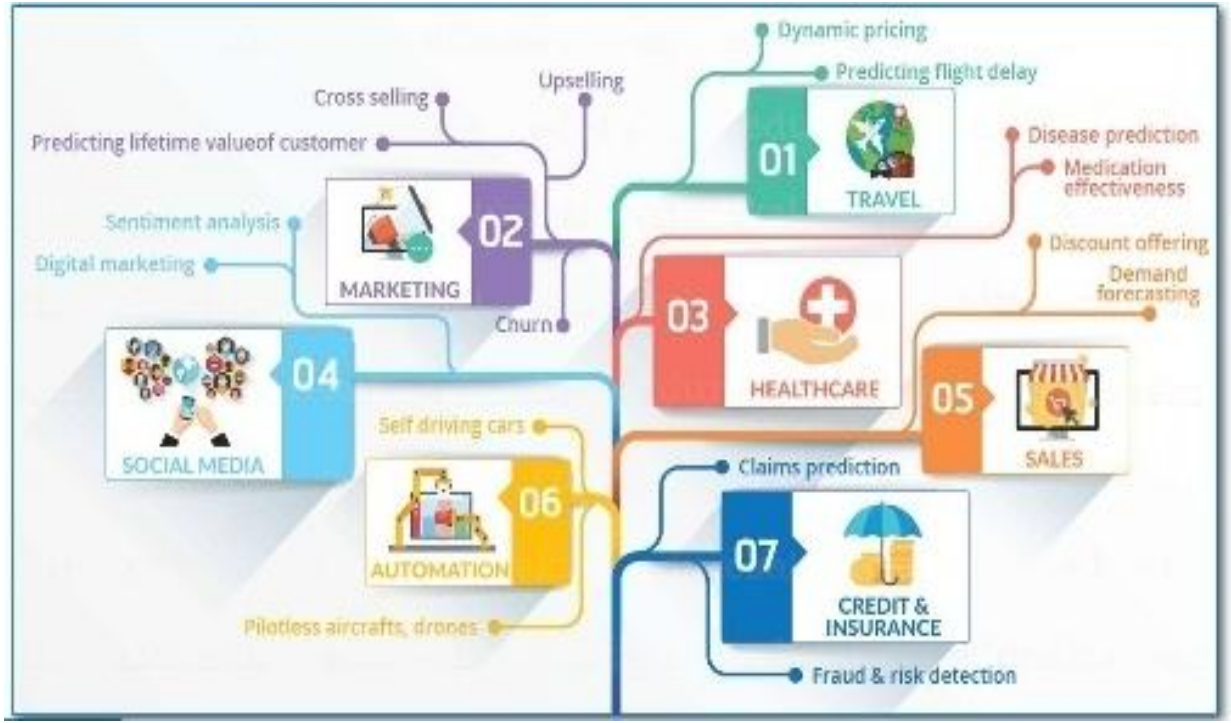


Understanding Machine Learning

Application of Machine Learning

Application of Machine Learning



Languages for Machine Learning

Languages for Machine Learning

Why Python for Machine Learning

- Python is very easy to use & Open Source
- It supports many libraries & frameworks
  - Numpy, Pandas, Scikit Learn
- Community & Corporate Support

Top 5 IDE for ML

1. Jupyter Notebook
2. Spyder
3. Pycharm
4. Atom
5. Vscode

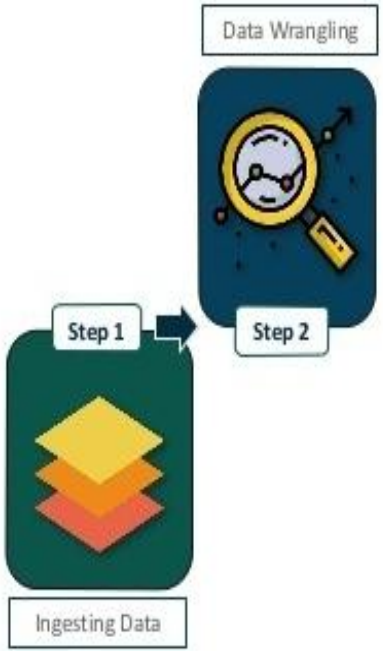
Virtual Environment

- Virtualenv
- Pipenv or pipenv-pipes
- Conda
- Docker

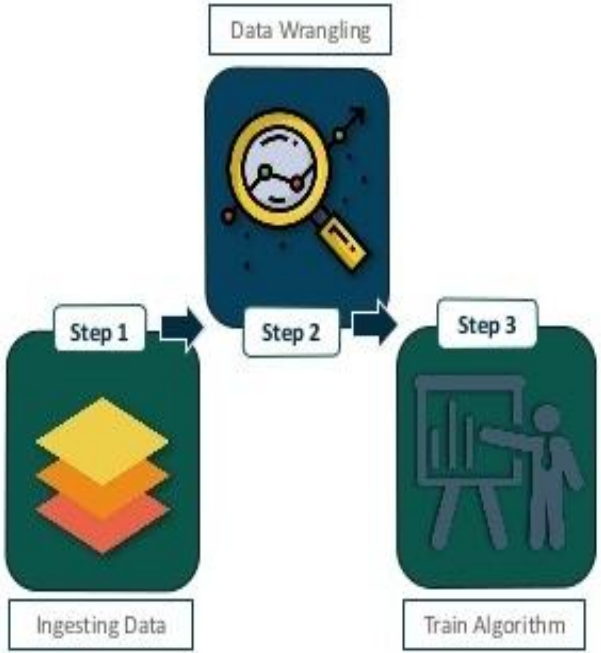
Steps in Machine Learning

Steps in Machine Learning

Steps in Machine Learning

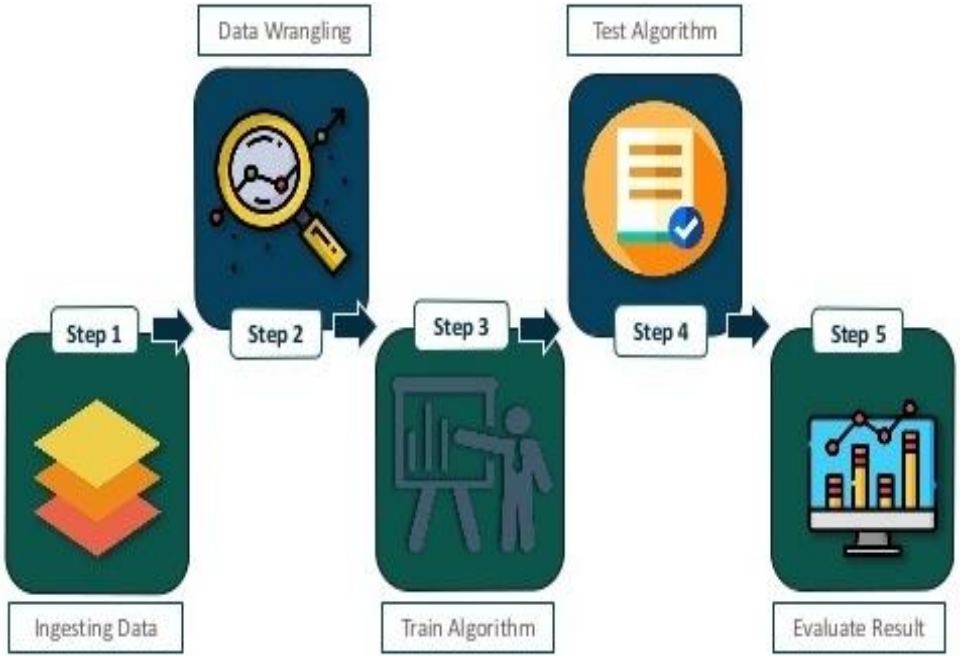


Steps in Machine Learning

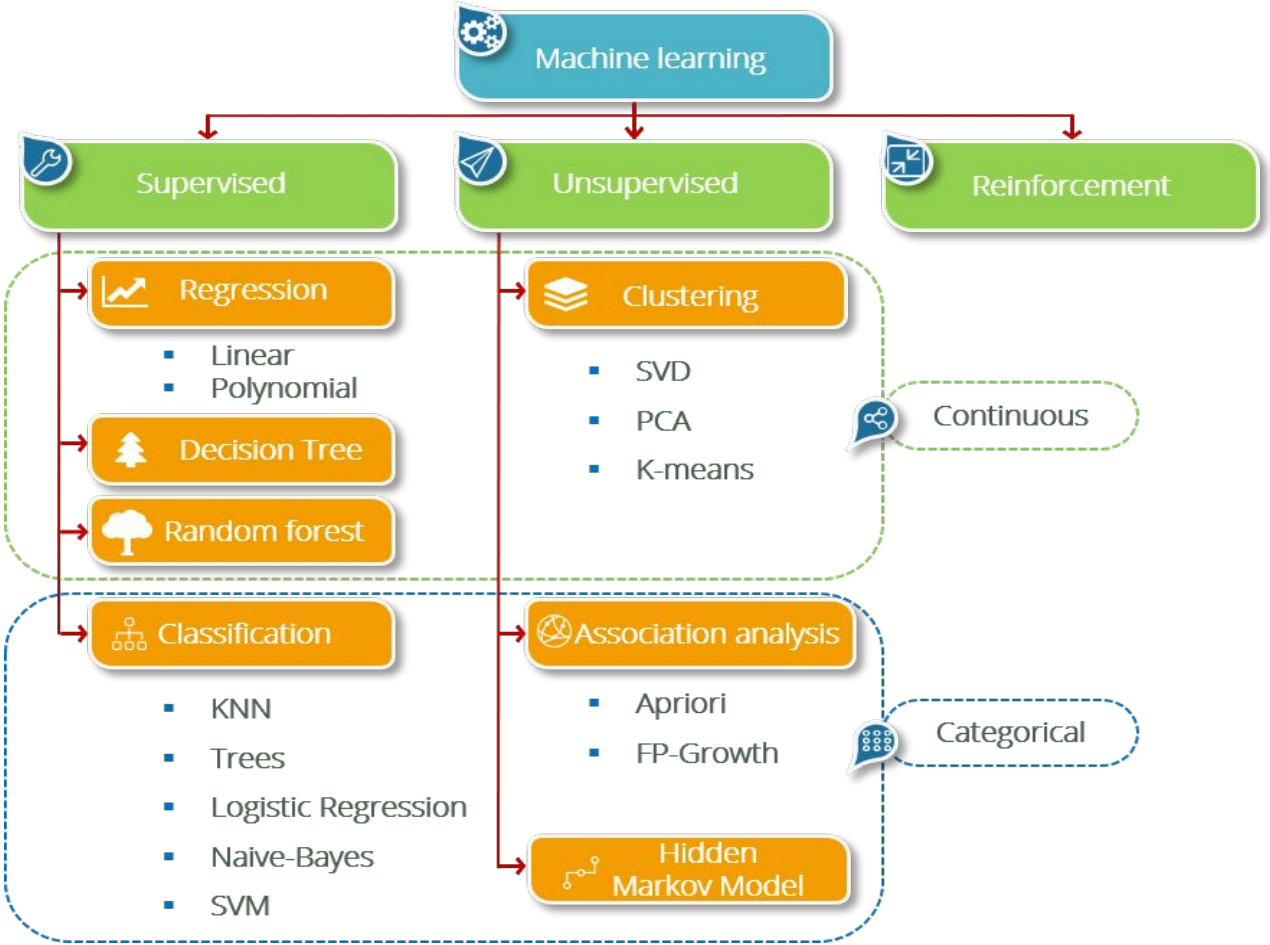


Steps in Machine Learning

Steps in Machine Learning



Types of Machine Learning


Machine learning
Supervised
Unsupervised
Reinforcement
Regression
Linear
Polynomial
Decision Tree
Random forest
Clustering
SVD
PCA
K-means
Continuous
Classification
KNN
Trees
Logistic Regression
Naive-Bayes
SVM
Association analysis
Apriori
FP-Growth
Hidden Markov Model
Categorical

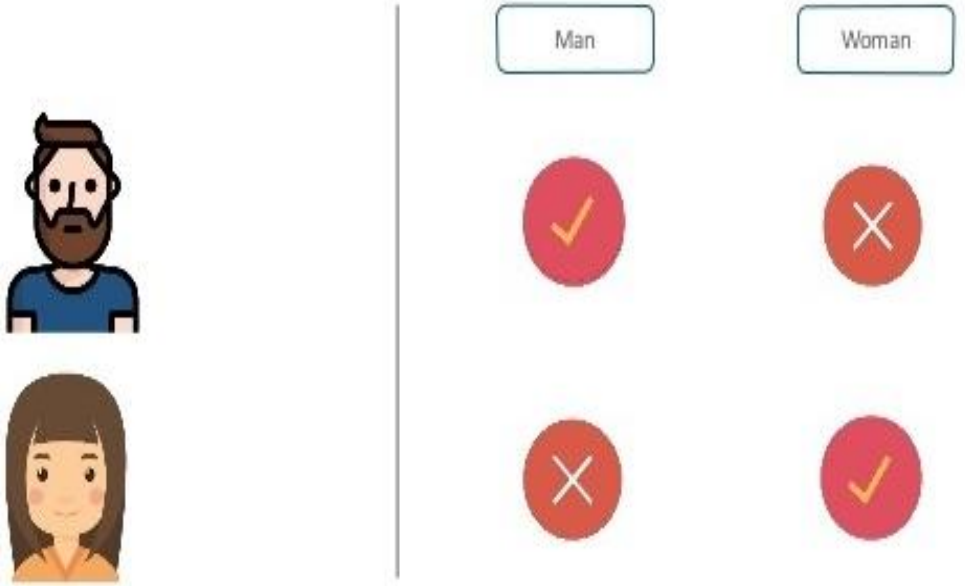
Supervised Learning

Supervised Learning

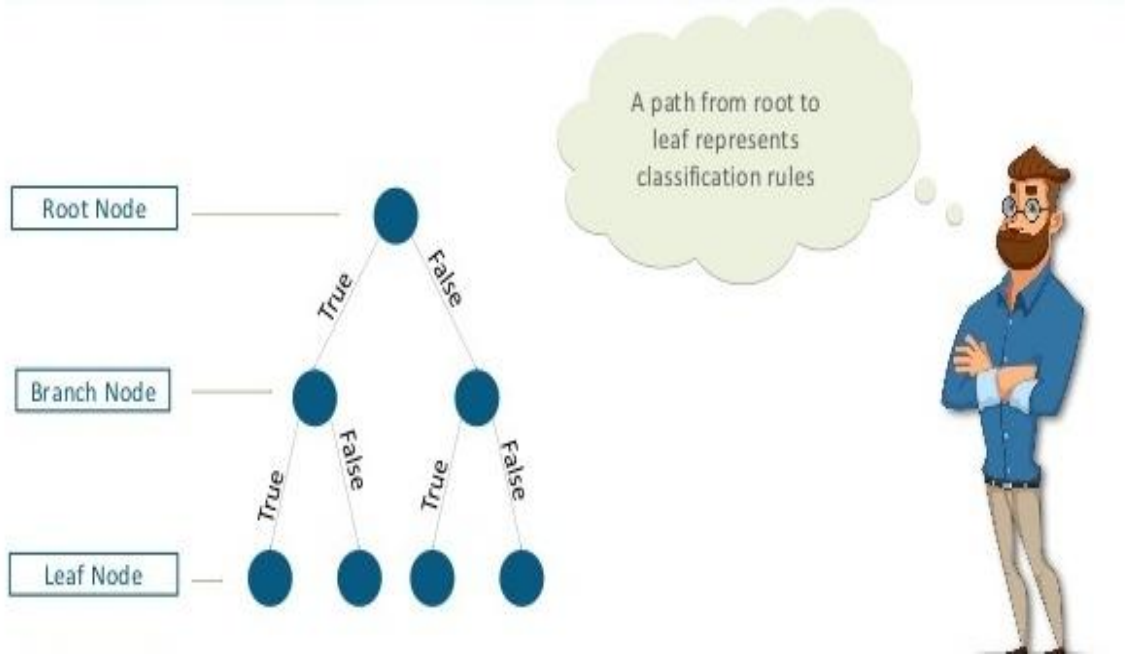
Supervised Learning

Classification

Classification

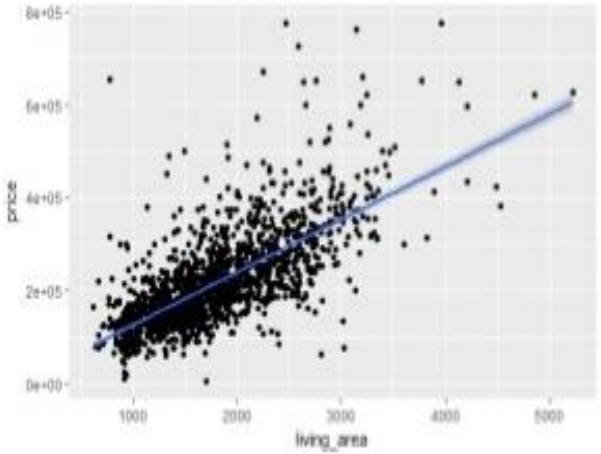


Classification - Decision Tree



Regression

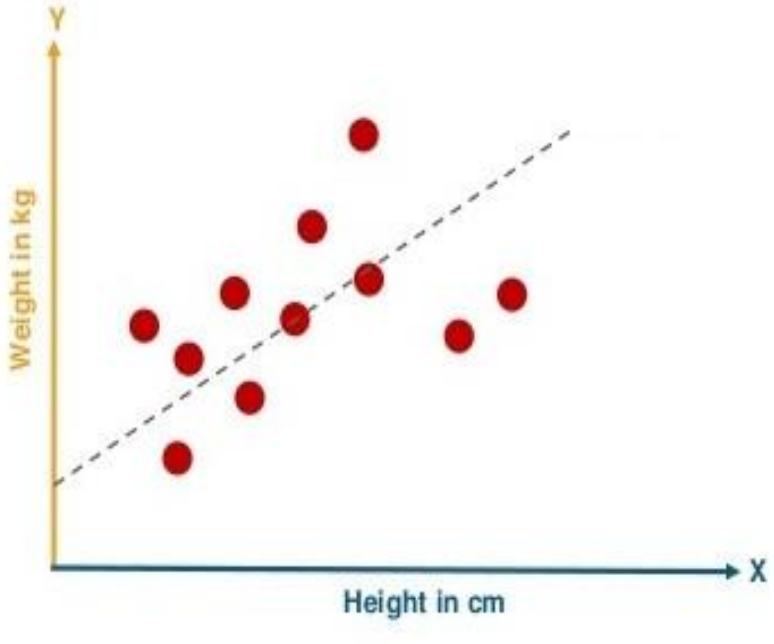
Regression



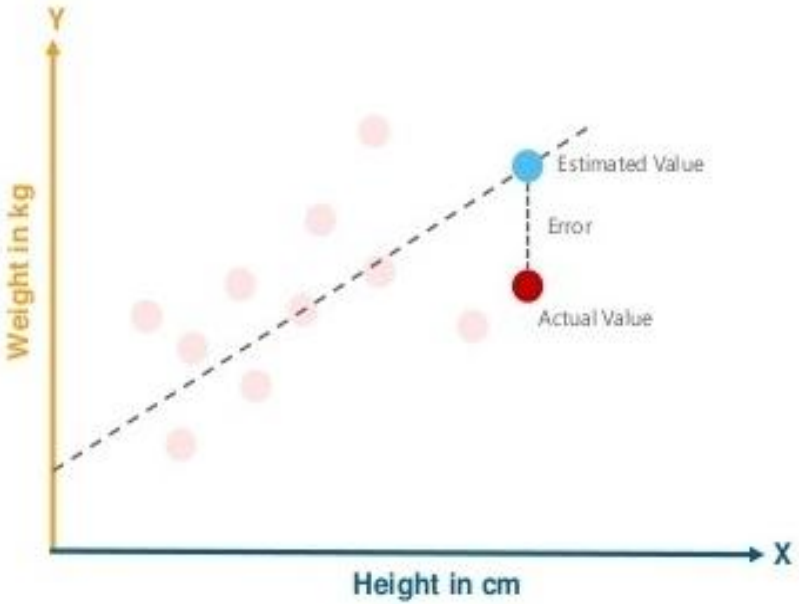
Function: Y=F(X)

Example of Machine Learning

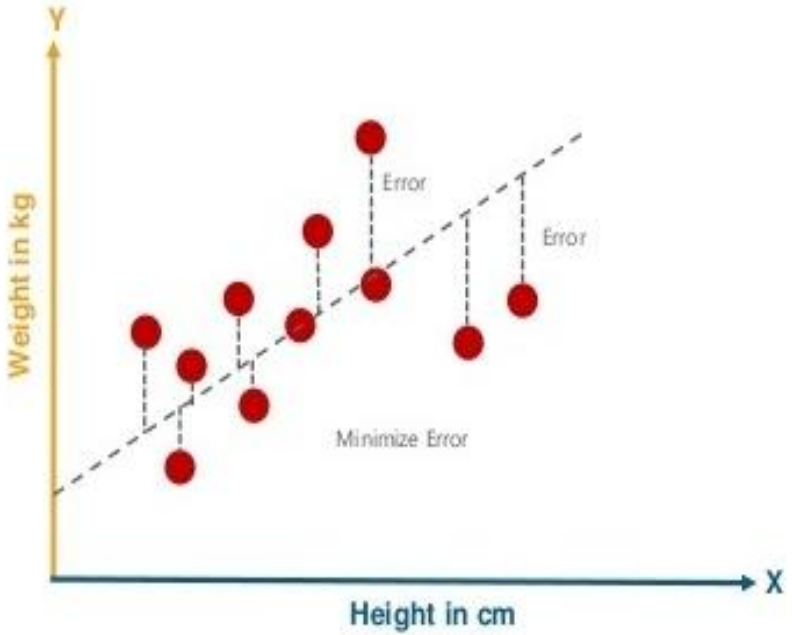
Example of Machine Learning



Example of Machine Learning



Example of Machine Learning

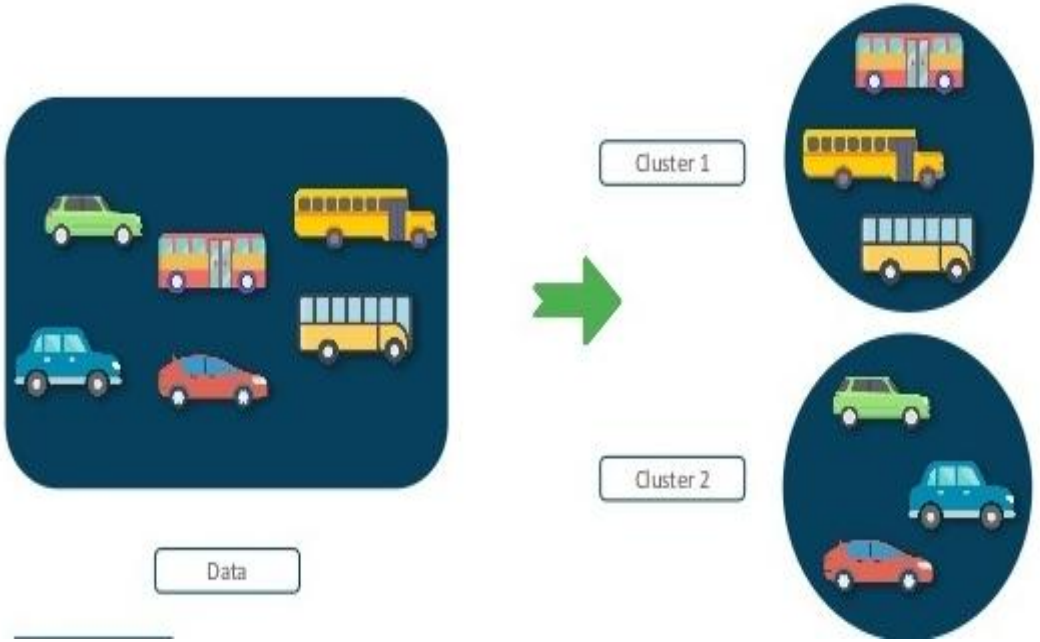


Unsupervised Learning

Unsupervised Learning

Unsupervised Learning

Clustering



Reinforcement Learning

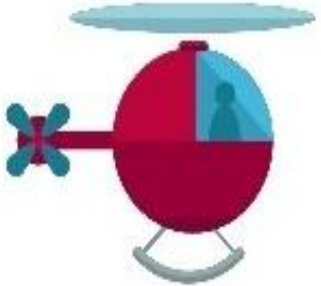
Reinforcement Learning

Reinforcement Learning

Real World Applications of Reinforcement Learning

Google's Self Driving Car

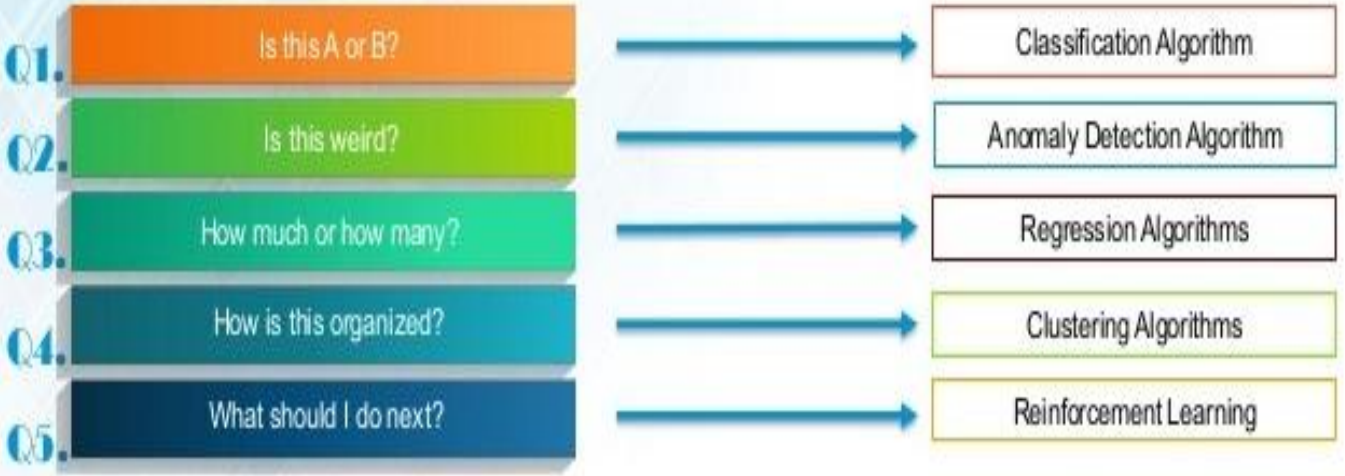
Manufacturing Robots



Autonomous Flying Helicopter

We take a top down approach to answer the same:

These are the 5 questions which can be answered in data science.



These algorithms are fitted into three types of categories, which are the following:

Thank You!!