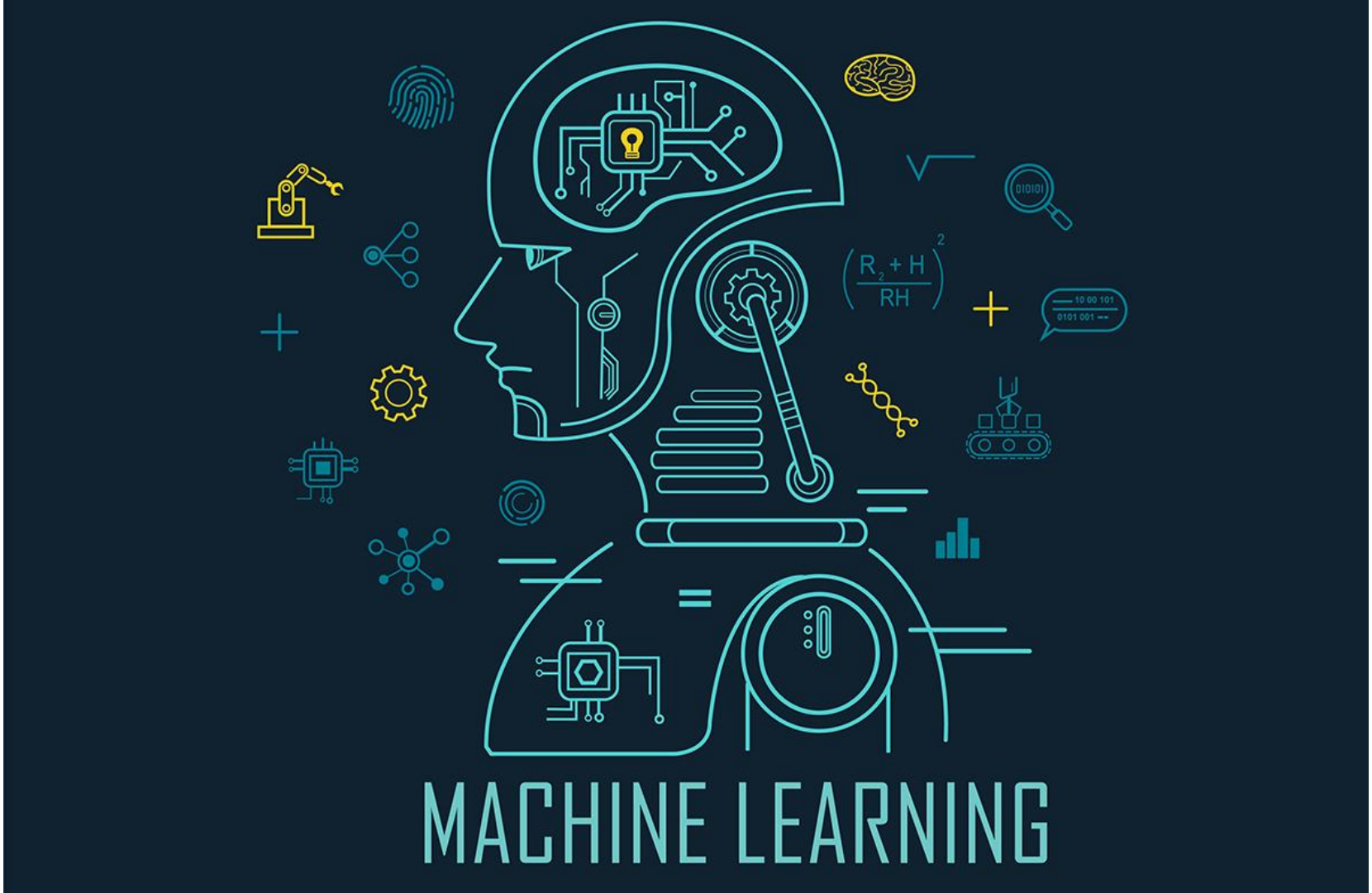
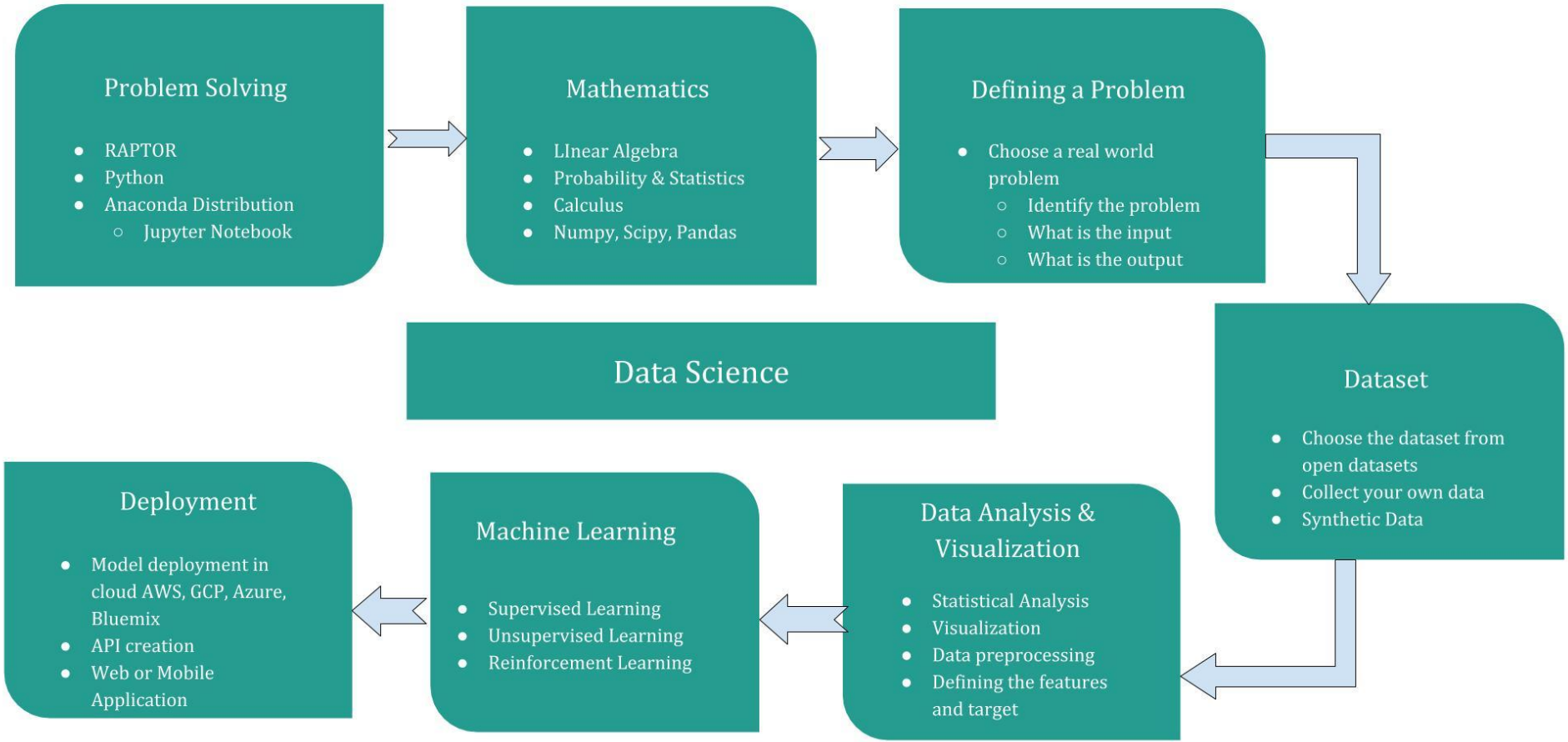
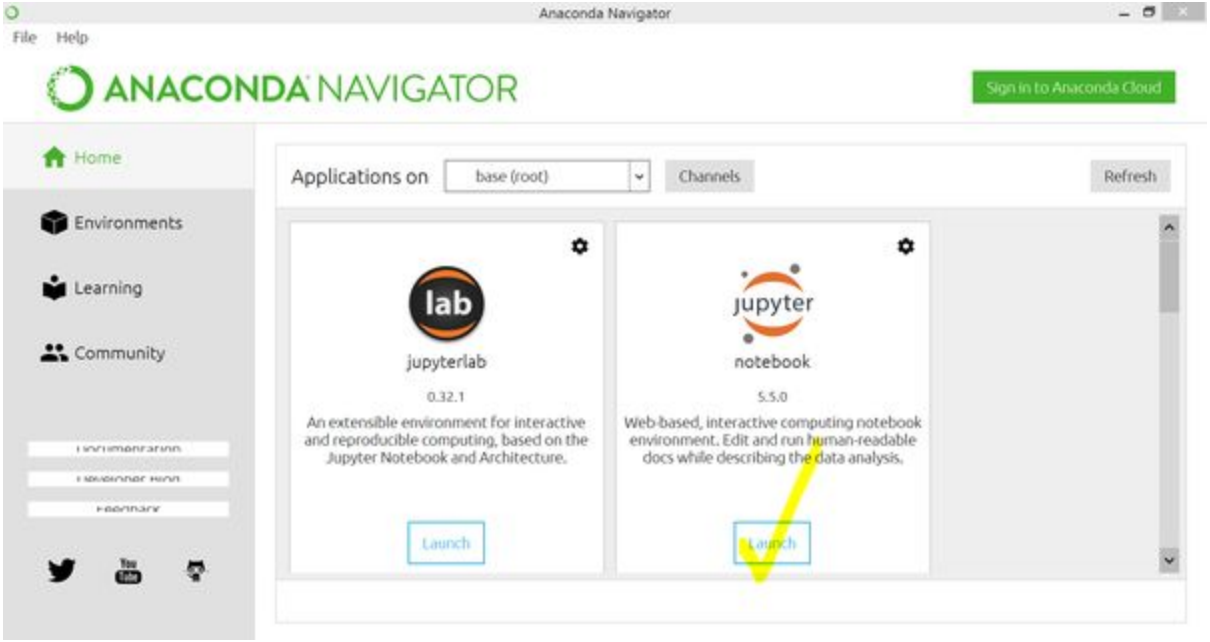
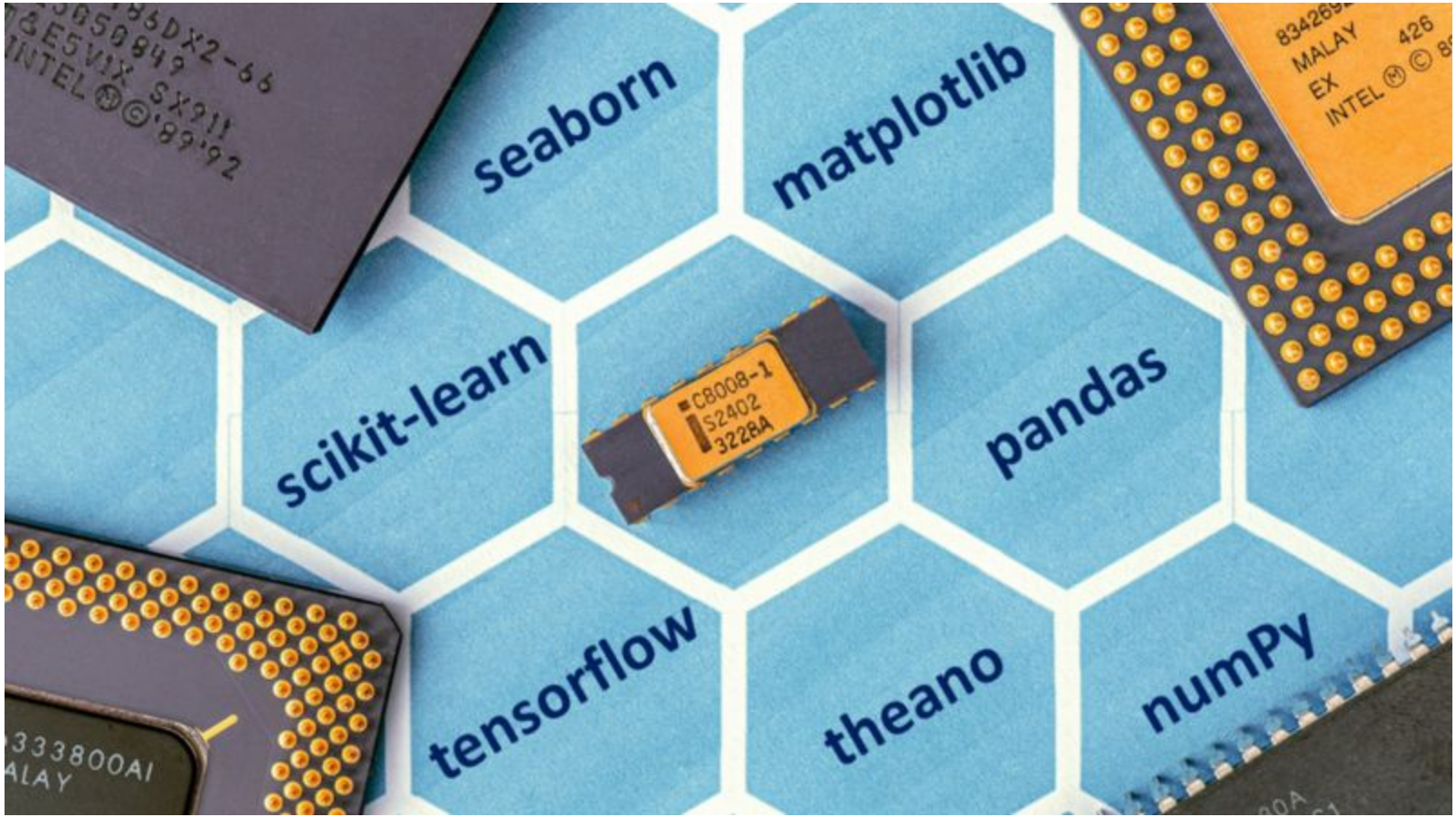
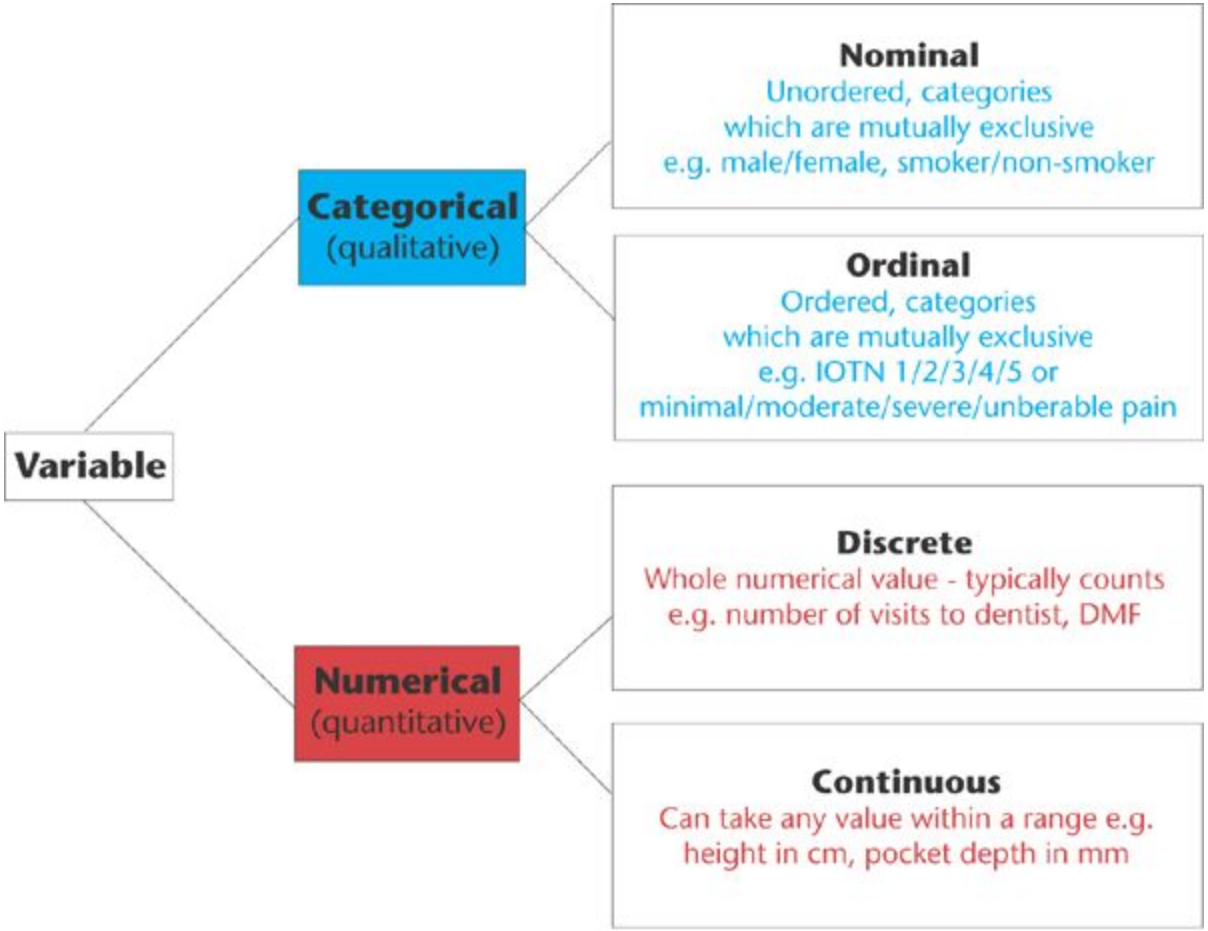
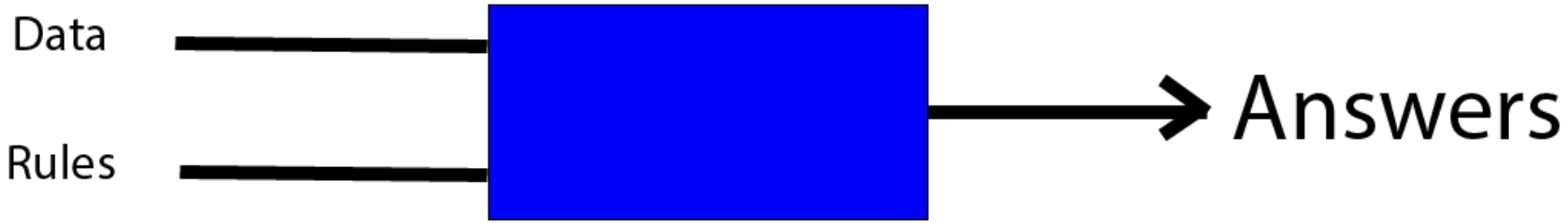

$\left(\frac{R_2 + H}{RH}\right)^2$
MACHINE LEARNING


Problem Solving
RAPTOR
Python
Anaconda Distribution
Jupyter Notebook
Mathematics
LInear Algebra
Probability & Statistics
Calculus
Numpy, Scipy, Pandas
Defining a Problem
Choose a real world problem
Identify the problem
What is the input
What is the output
Dataset
Choose the dataset from open datasets
Collect your own data
Synthetic Data
Data Science
Data Analysis & Visualization
Statistical Analysis
Visualization
Data preprocessing
Defining the features and target
Machine Learning
Supervised Learning
Unsupervised Learning
Reinforcement Learning
Deployment
Model deployment in cloud AWS, GCP, Azure, Bluemix
API creation
Web or Mobile Application


Anaconda Navigator
File
Help
ANACONDA NAVIGATOR
Sign in to Anaconda Cloud
Home
Environments
Learning
Community
Applications on
base (root)
Channels
Refresh
lab
jupyterlab
0.32.1
An extensible environment for interactive and reproducible computing, based on the Jupyter Notebook and Architecture.
Launch
jupyter
notebook
5.5.0
Web-based, interactive computing notebook environment. Edit and run human-readable docs while describing the data analysis.
Launch

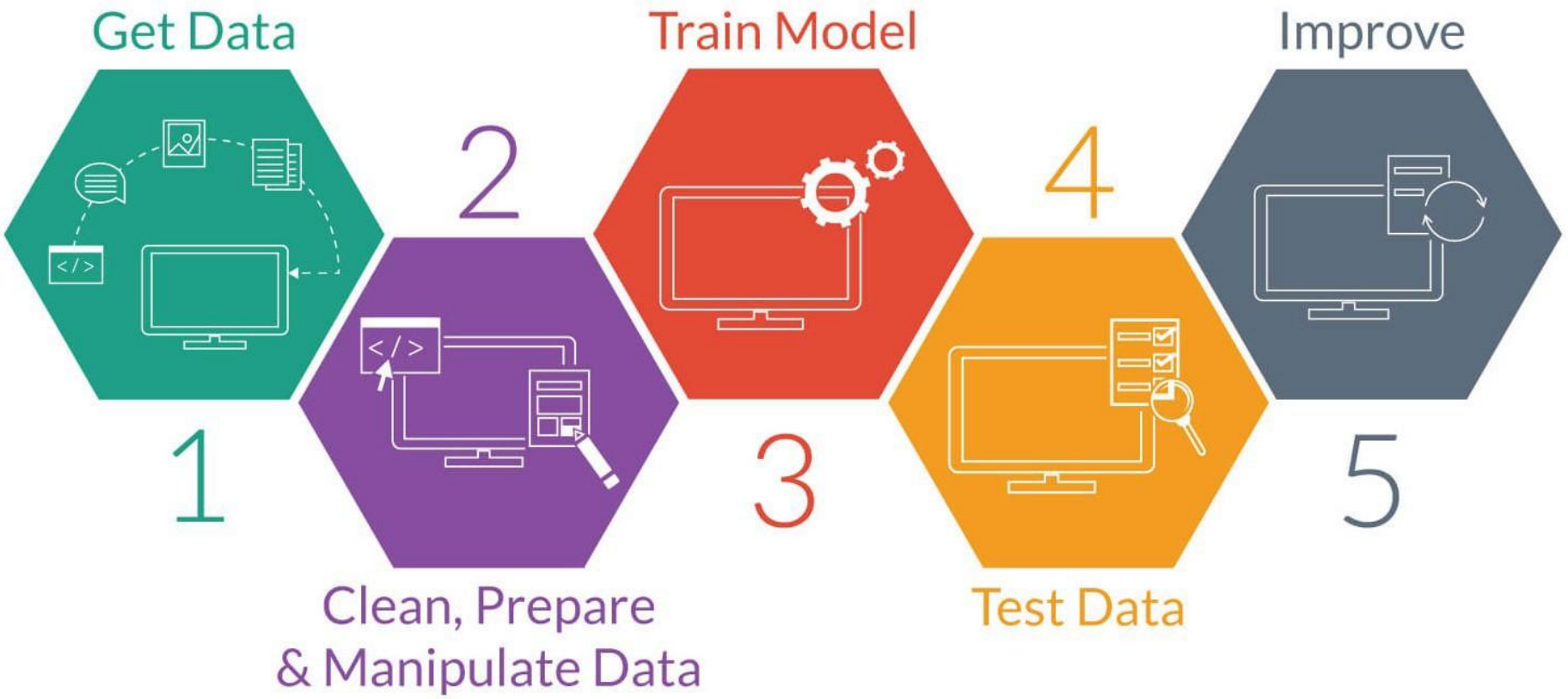

seaborn
matplotlib
scikit-learn
pandas
tensorflow
theano
numPy

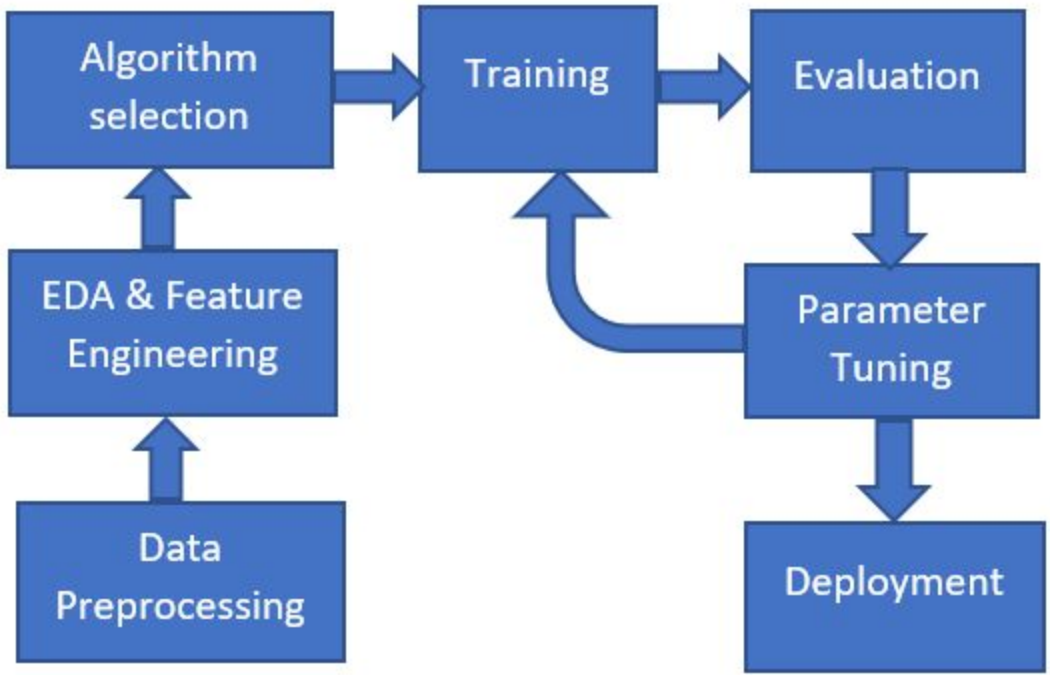

Variable
Categorical
(qualitative)
Nominal
Unordered, categories
which are mutually exclusive
e.g. male/female, smoker/non-smoker
Ordinal
Ordered, categories
which are mutually exclusive
e.g. IOTN 1/2/3/4/5 or
minimal/moderate/severe/unberable pain
Numerical
(quantitative)
Discrete
Whole numerical value - typically counts
e.g. number of visits to dentist, DMF
Continuous
Can take any value within a range e.g.
height in cm, pocket depth in mm



Classical Programming

Machine Learning
Programming


Get Data
1
2
Clean, Prepare
& Manipulate Data
Train Model
3
4
Test Data
Improve
5


Algorithm selection
Training
Evaluation
EDA & Feature Engineering
Parameter Tuning
Data Preprocessing
Deployment

Types of Machine Learning – At a Glance

Supervised Learning

- Makes machine Learn explicitly
- Data with clearly defined output is given
- Direct feedback is given
- Predicts outcome/future
- Resolves classification and regression problems

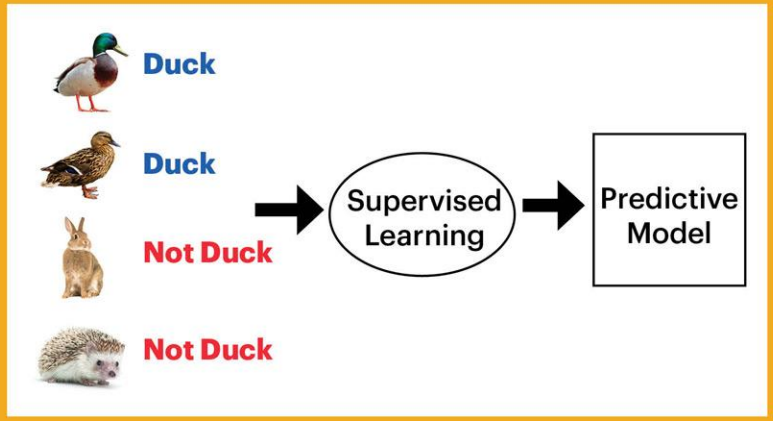
Unsupervised Learning

- Machine understands the data (Identifies patterns/structures)
- Evaluation is qualitative or indirect
- Does not predict/find anything specific

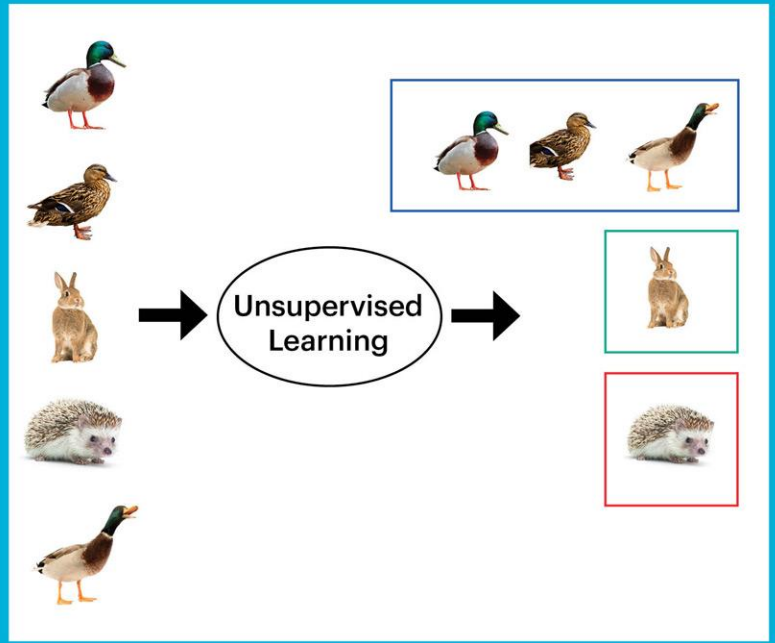
Reinforcement Learning

- An approach to AI
- Reward based learning
- Learning form +ve & +ve reinforcement
- Machine Learns how to act in a certain environment
- To maximize rewards

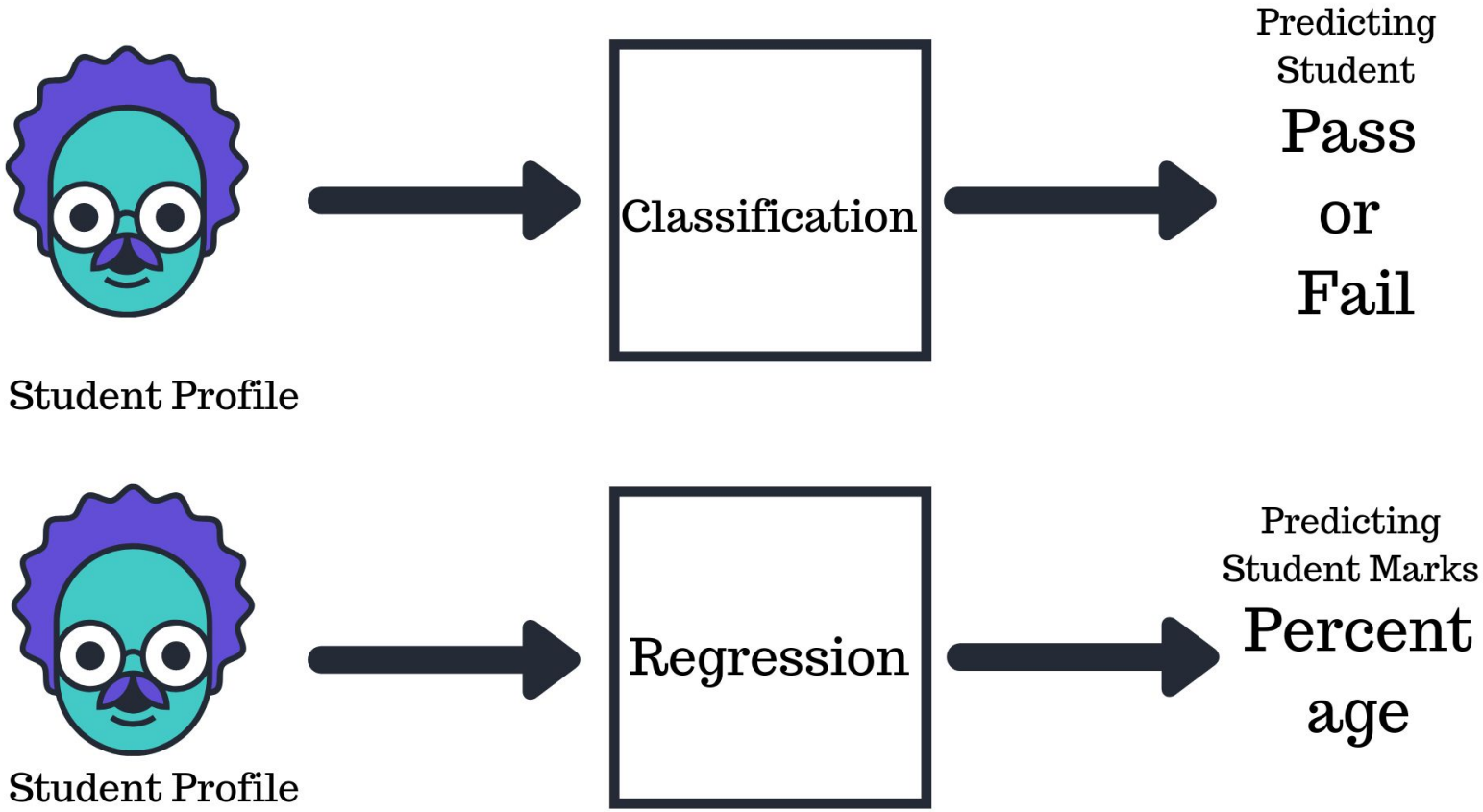
Supervised Learning (Classification Algorithm)



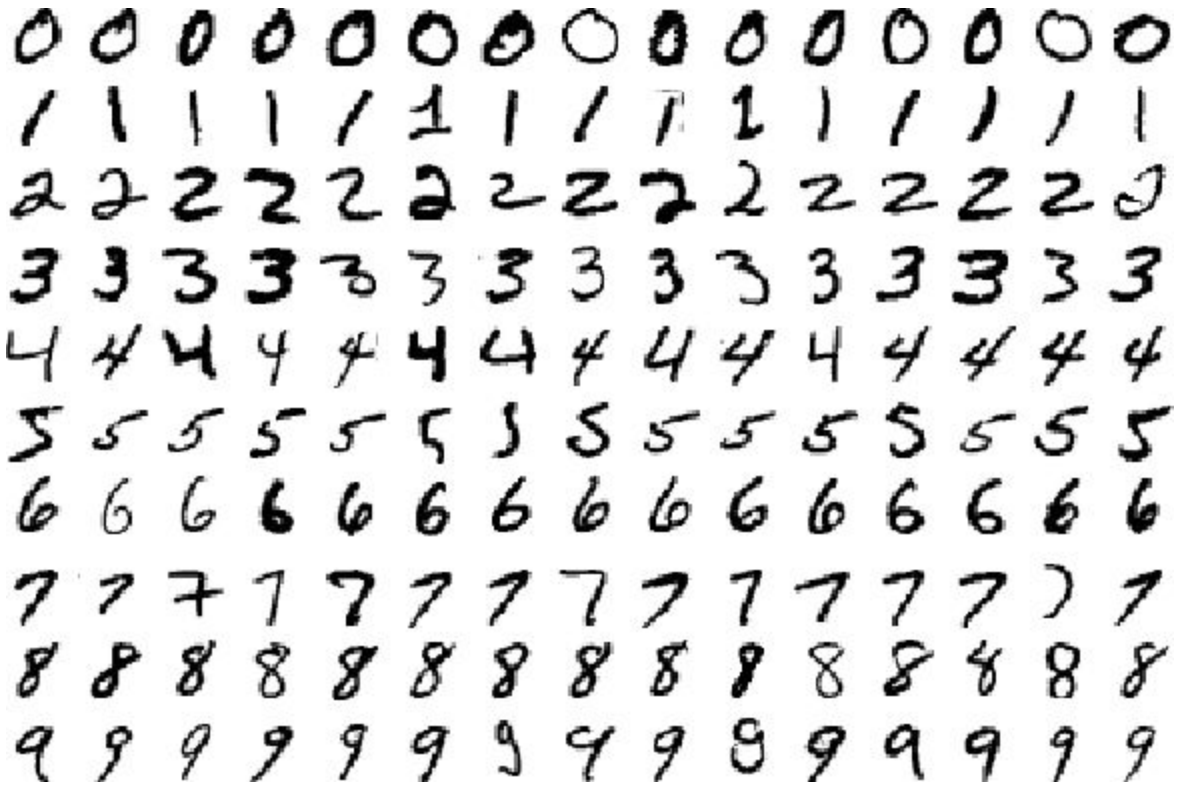
Unsupervised Learning (Clustering Algorithm)



Classification Vs Regression

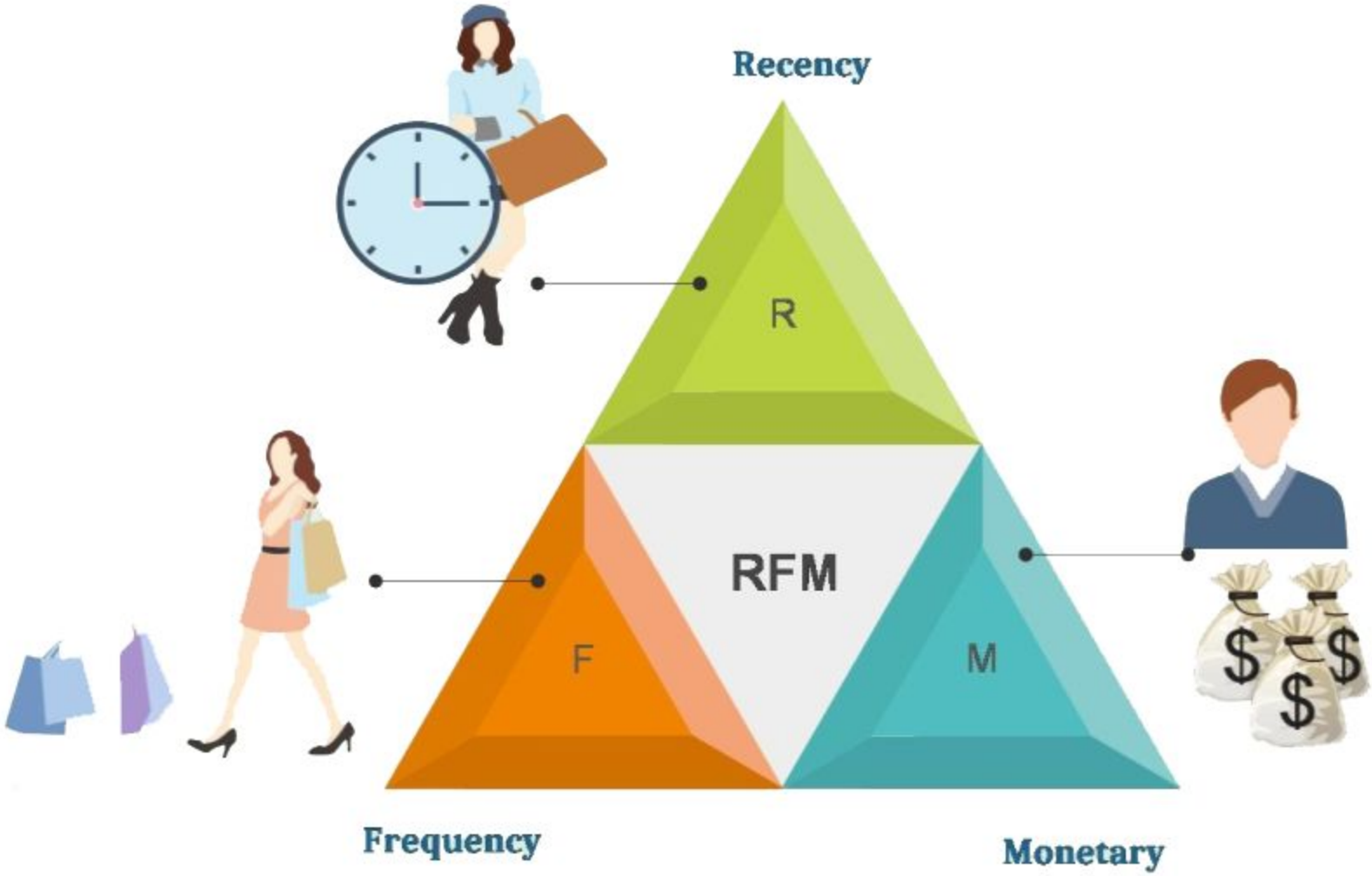



SPAM
SPAM
SPAM FILTER



HOUSE PRICE PREDICTION


Guftagu
Cafe
dineout


Recency
R
RFM
F
M
Frequency
Monetary

- Predictive maintenance or condition monitoring
- Warranty reserve estimation
- Propensity to buy
- Demand forecasting
- Process optimization
- Telematics

Manufacturing

- Predictive inventory planning
- Recommendation engines
- Upsell and cross-channel marketing
- Market segmentation and targeting
- Customer ROI and lifetime value

Retail

- Alerts and diagnostics from real-time patient data
- Disease identification and risk stratification
- Patient triage optimization
- Proactive health management
- Healthcare provider sentiment analysis

Healthcare and Life Sciences

- Aircraft scheduling
- Dynamic pricing
- Social media – consumer feedback and interaction analysis
- Customer complaint resolution
- Traffic patterns and congestion management

Travel and Hospitality

- Risk analytics and regulation
- Customer Segmentation
- Cross-selling and up-selling
- Sales and marketing campaign management
- Credit worthiness evaluation

Financial Services

- Power usage analytics
- Seismic data processing
- Carbon emissions and trading
- Customer-specific pricing
- Smart grid management
- Energy demand and supply optimization

Energy, Feedstock, and Utilities

THANK YOU.....

DO YOU HAVE ANY QUESTİONS ?