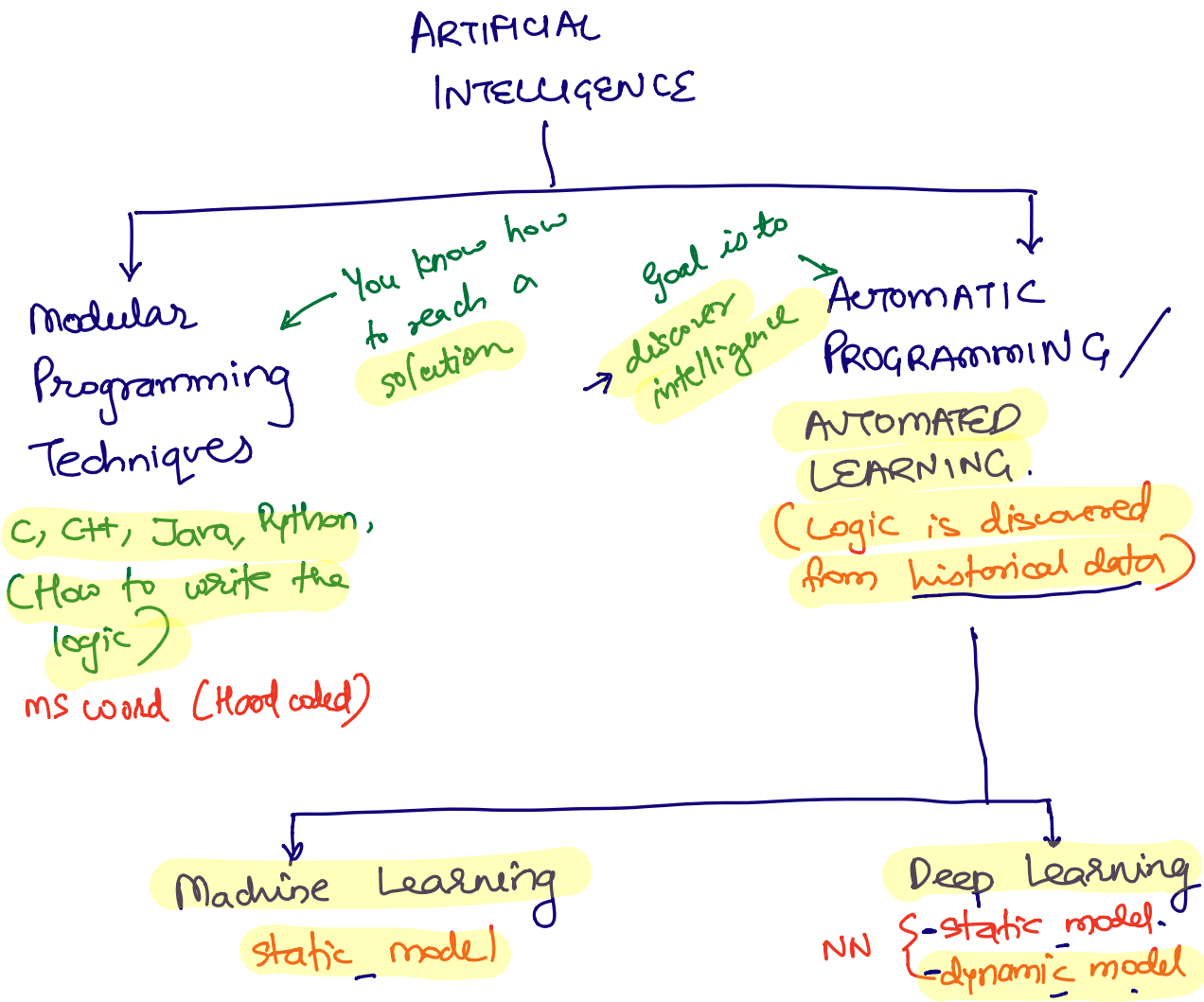
ARTIFICIAL INTELLIGENCE — (Business Term - simulation of human intelligence by a m/c or s/w)

MACHINE LEARNING —

DEEP LEARNING

DATA MINING —

→ EXTRACT INTELLIGENCE OUT OF HISTORICAL DATA

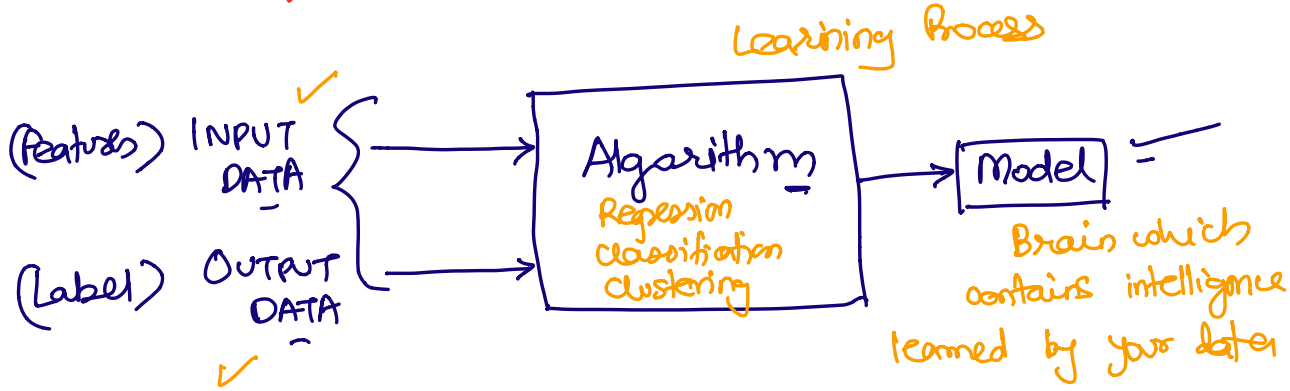


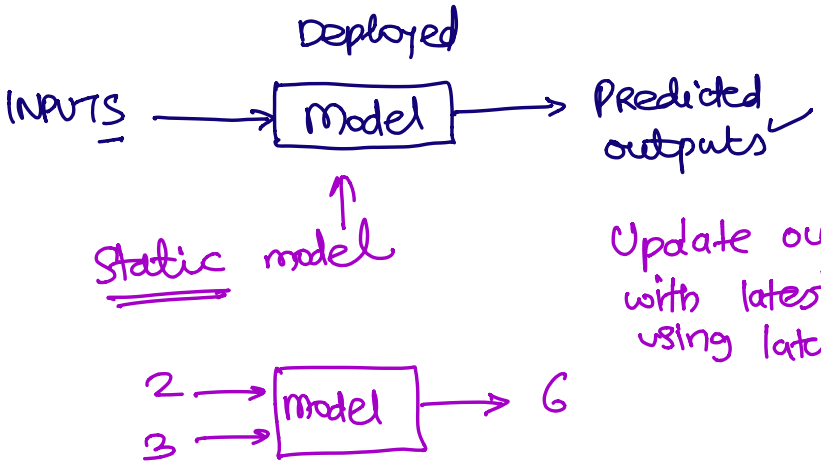
Machine Learning: Implementation technique to extract intelligence out of the data using

- Regression
- Classification
- clustering

← (a) Data Mining Algorithms.

(b) Statistical formulae. → Testing Error function.





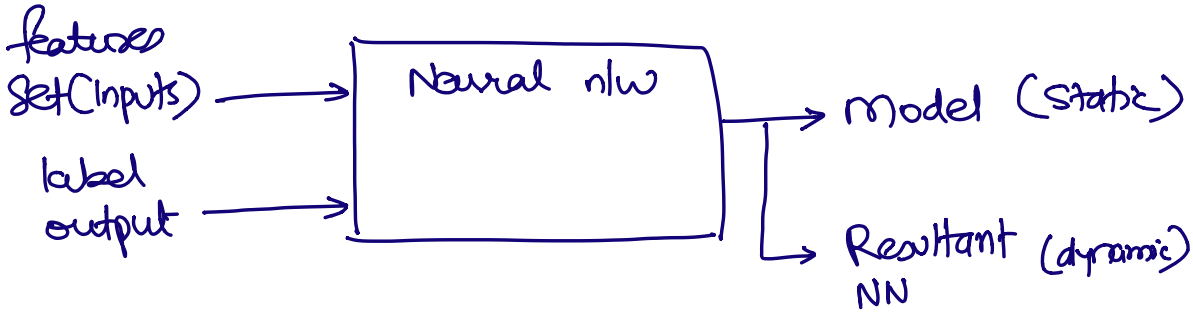
INCREMENTAL LEARNING

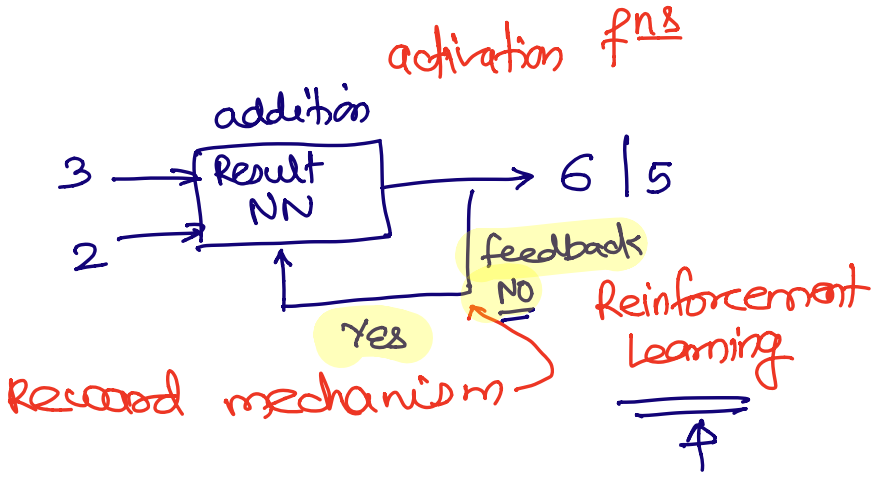
Recommendation Systems.

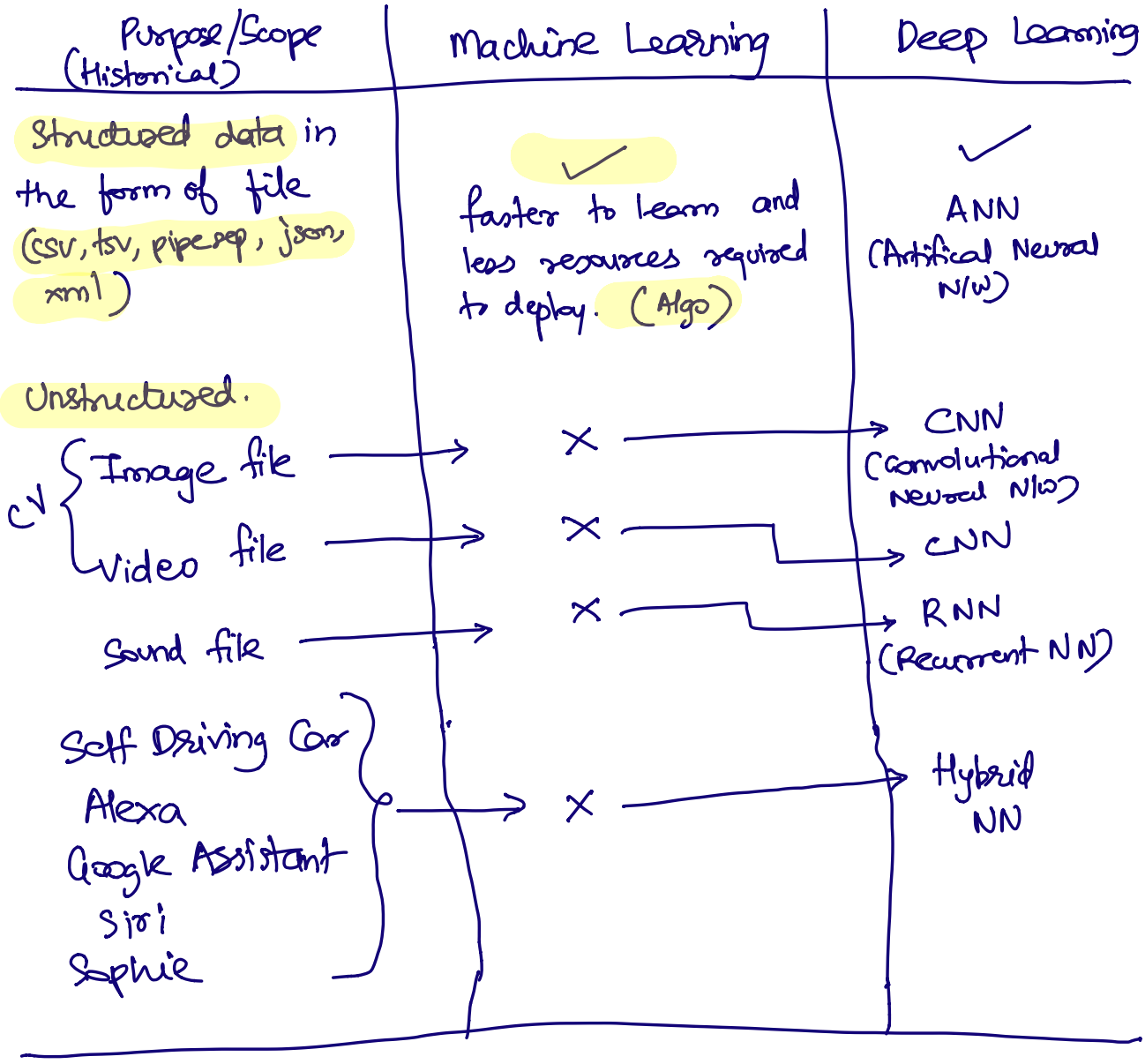
DEEP LEARNING : Implementation technique to extract intelligence out of the data using

To perform learning ← ① NEURAL NETWORK

Testing & Eval ← ② STATISTICAL TECHNIQUES






Purpose/Scope (Historical)
Machine Learning
Deep Learning
Structured data in the form of file (csv, tsv, pipesep, json, xml)
faster to learn and less resources required to deploy. (Algo)
ANN (Artifical Neural N/W)
Unstructured.
CV
Image file
Video file
Sound file
CNN (Convolutional Neural N/W)
CNN
RNN (Recurrent NN)
Self Driving Car
Alexa
Google Assistant
Siri
Sophie
Hybrid NN

machine Learning | Deep Learning | Bigdata Analytics | AI

R	Python
(opensource) great community support	(opensource) great community support
Less support to Bigdata (enterprise libraries are not that robust)	Python has many rich libraries that support Bigdata env.
RHadoop, SparkR	PySpark, PyHadoop
The above is not enterprise ready yet.	The above is enterprise ready.
R expects your data to be in a single m/c.	Python is flexible in terms of data locality

Expectations:

① Basic knowledge on Python.

Discuss in my class! ⇒
- Basics
- Collections (List, Dictionaries, Tuples, Set)
- Numpy (numerical arrays – 1D, 2D, n-D)
- Pandas (Data wrangling, manipulation)
  (EDA (Exploratory Data Analysis))

② Coding in Jupyter notebook. (Anaconda Distribution)