Deep Learning intro

(1) Basics → (3) Image processing → Image Classification (CNN)

L (2) Reg/Class ← Torch Basic

↓

NLP ⟷ TimeSeries (LSTMs)

Machine Learning

(1) Implement aspect of Humans / Replace an expert system

→ Loan approval
→ Insurance claim
→ Forecast (ARIMA)

eg) Maruti 800 / Swift desire | Computational less expensive

→ Can deal with smaller data size

50,000 → 4 Rs (→ 2000)

Deeplearning

(1) Problem when a Common human sense is by DL System

Few Shot Learning

→ Language Transformation / Image detection

eg) High Computational

Jaguar / Ferrari

No feature Engineering

NON-Black

Broadest

(RL) Artificial Intelligence (ML)

Technique: ML, Deep Learning

Neural Networks

Neurons

intelligence (DL)

Giving the intelligence to system artificially

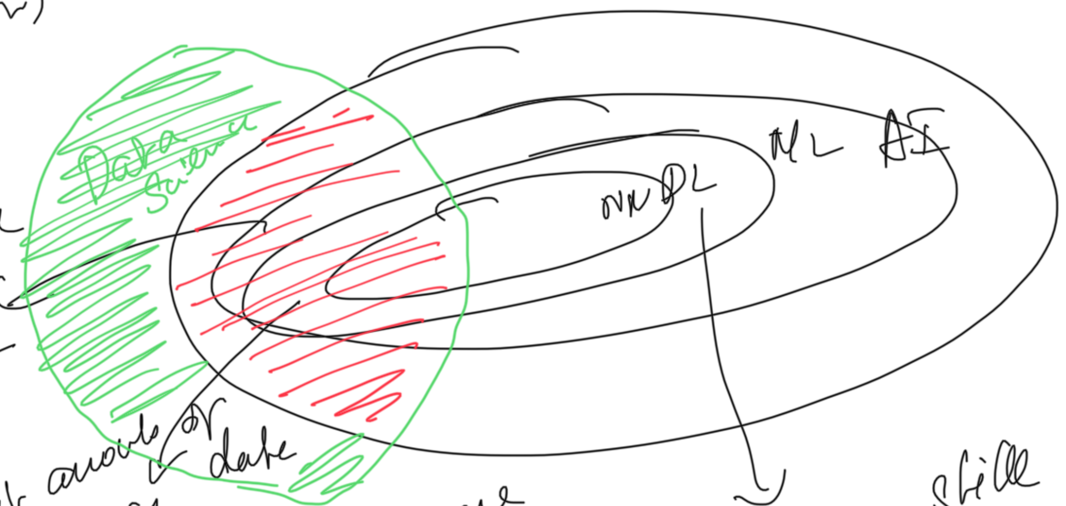
DL → is one of the ways to do it.

~~Set of eliminaries~~ Set of a lot or bunch Algorithms (FF)
↓
That make use of Neural Networks (brain mimicking) that learn from the features we feed (or identifies Deep features also)

Backbone of DL algos are N.N "neural" because of how they try to mimic the brain.

Smallest unit / block of a neural net are called neurons.

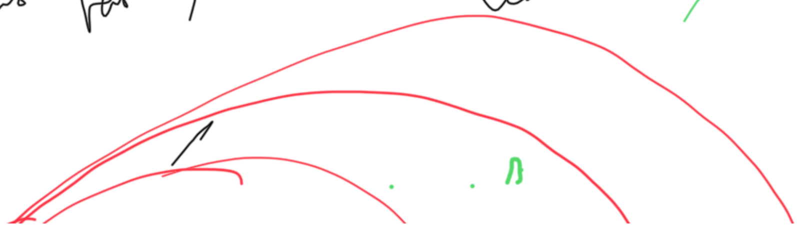
→ understanding of features occur - although & even very deep manner (deep learning vision)

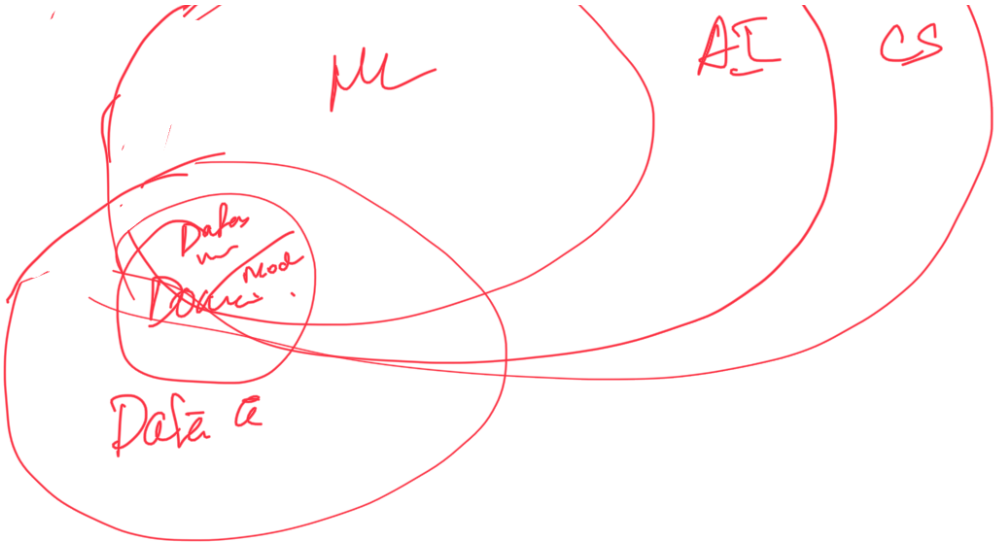


Machine learning

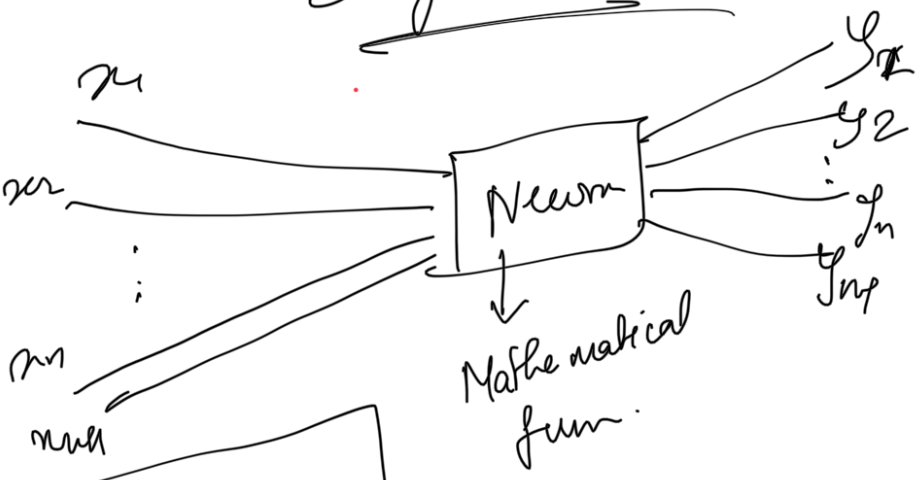
vast amount of data
(Scalable)
(NN Backbone + faster fash)

We are still trying to make machines learn!!!!!

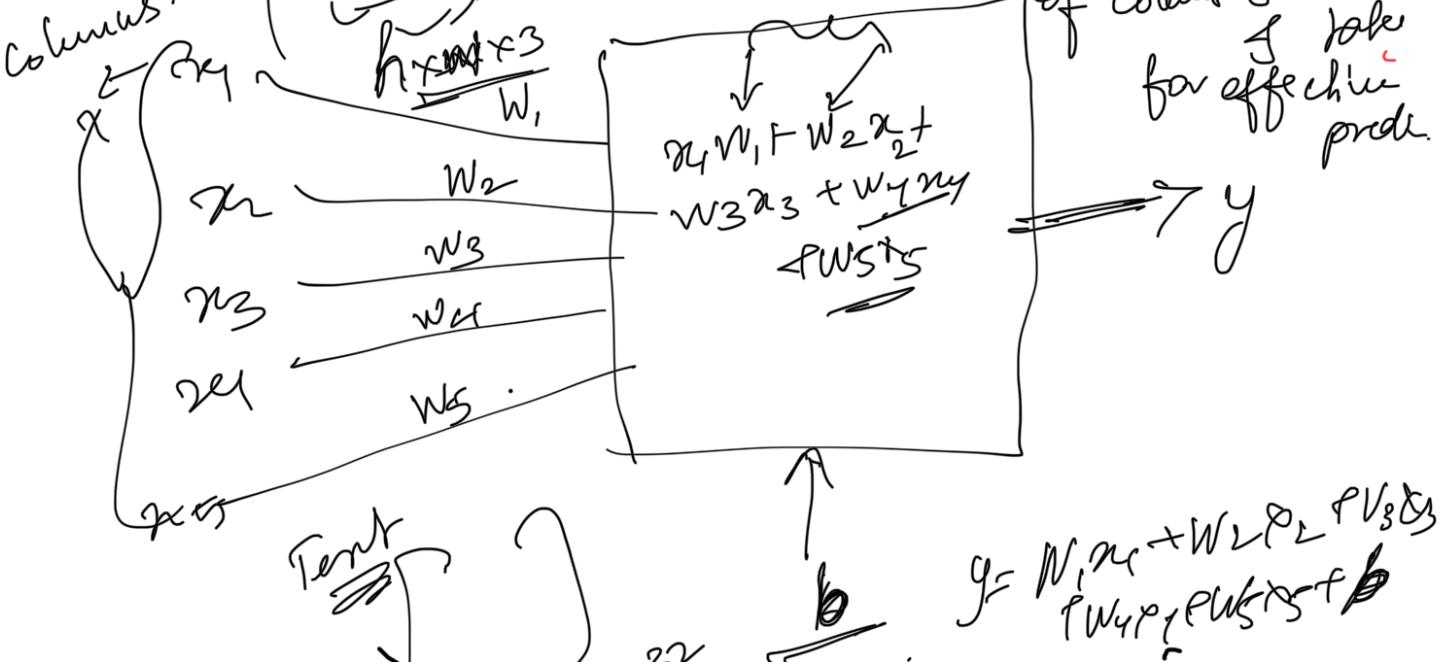


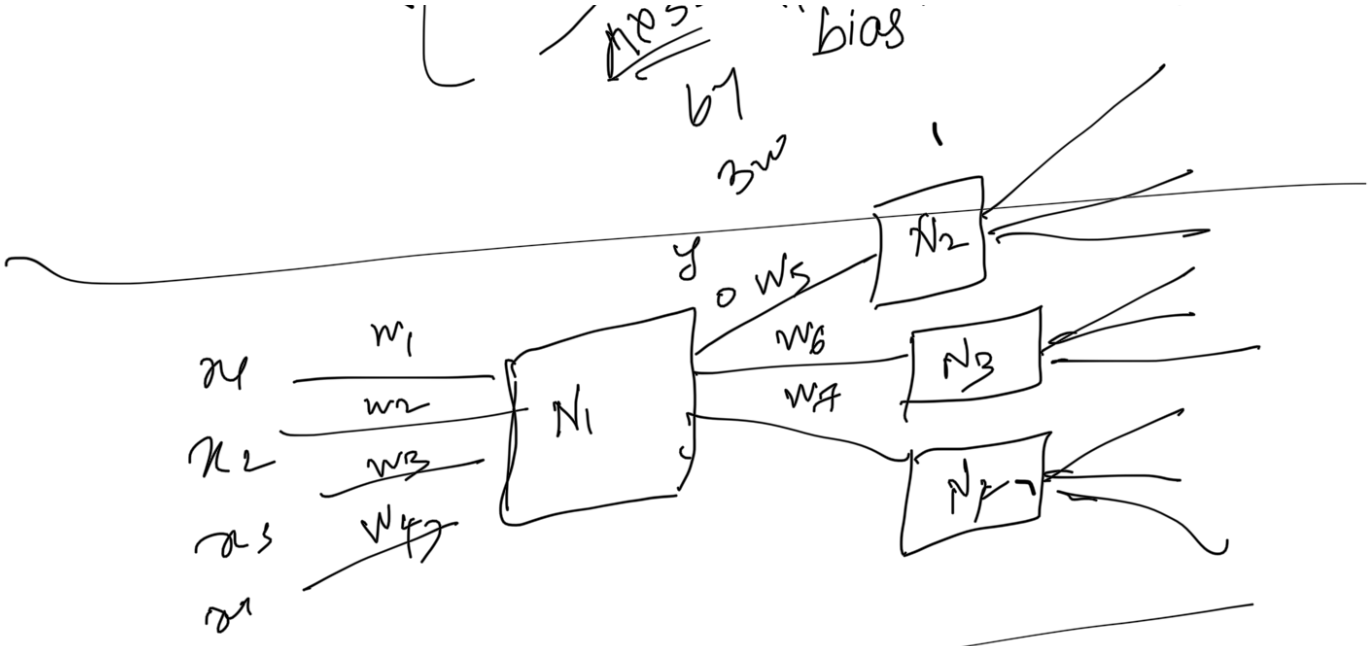


Single Neuron

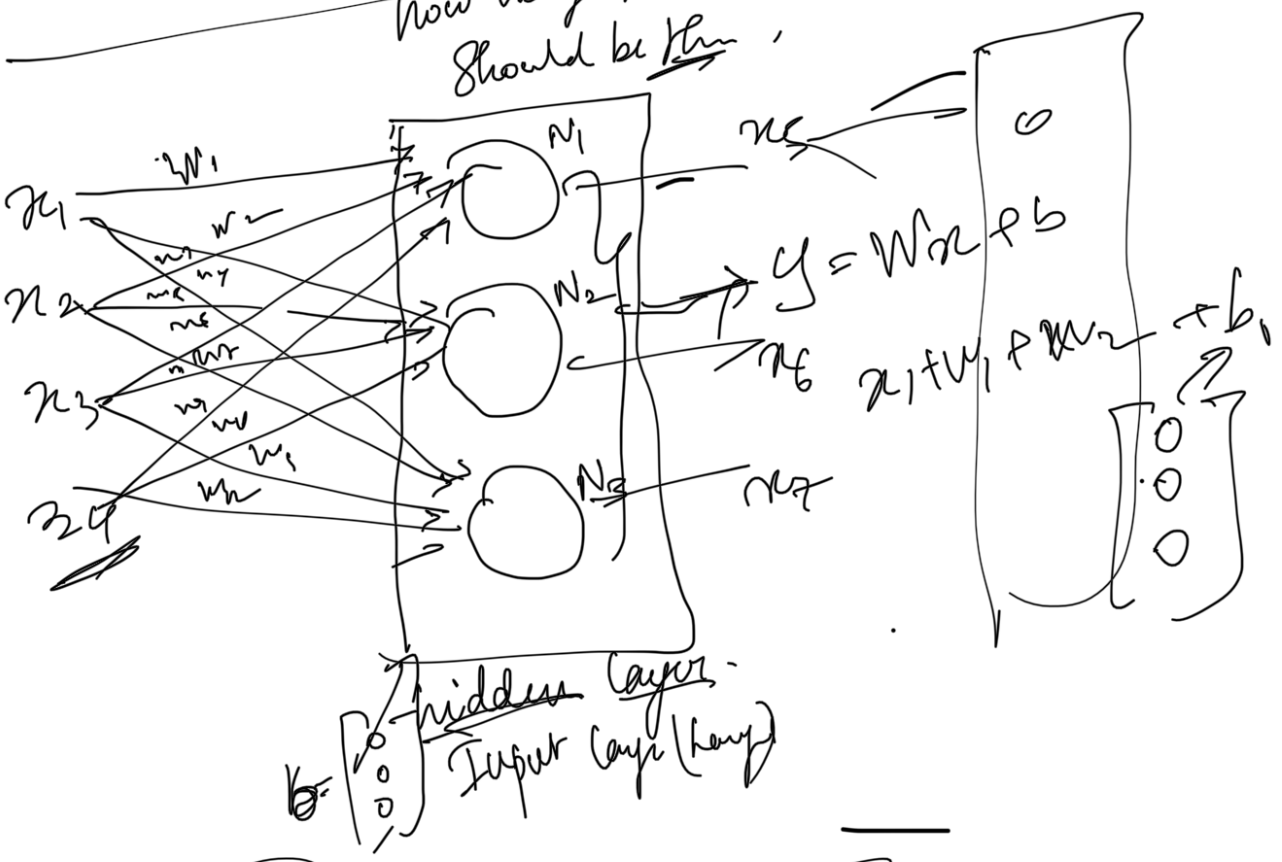


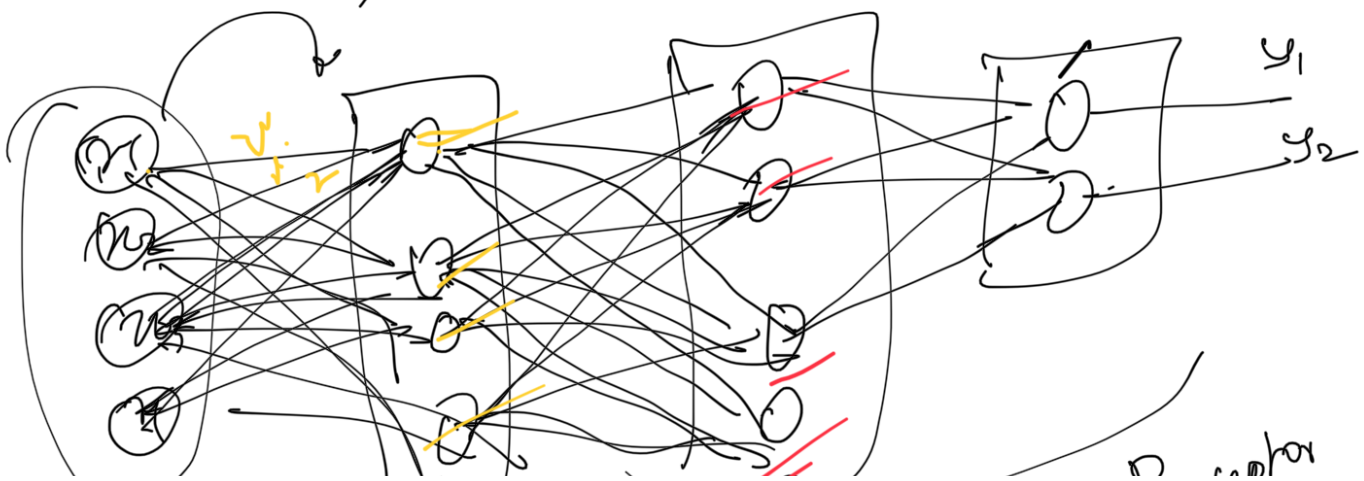
$y = mx + c$





How many neurons should be there?

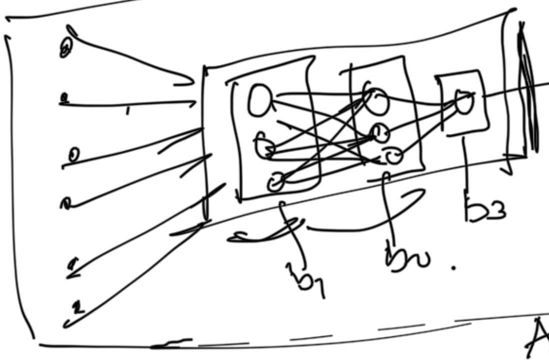




Hidden layer
Dense layer

MLP ⇒ Multi layer Percep.

→ MLP | ANN | FCN (Neural Networks)



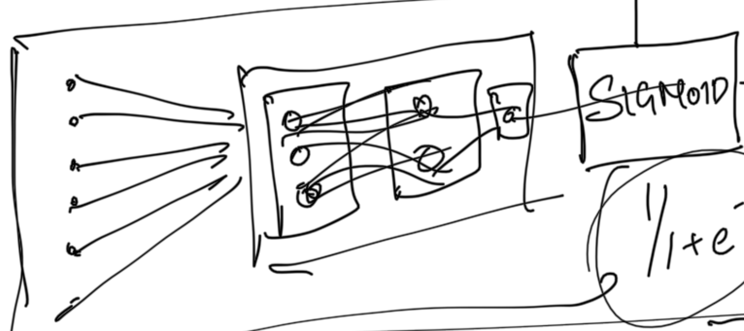
O/p → (-∞, ∞)

Wx + b

Regression function

Regn

ACTIVATION FUNCTION



P(y)

$\frac{1}{1+e^{-z}} = \frac{1}{1+e^{-(wx+b)}}$

Classification

(-∞, ∞) ⟶ (0, ∞) ⟹ (0, 1)

Probability

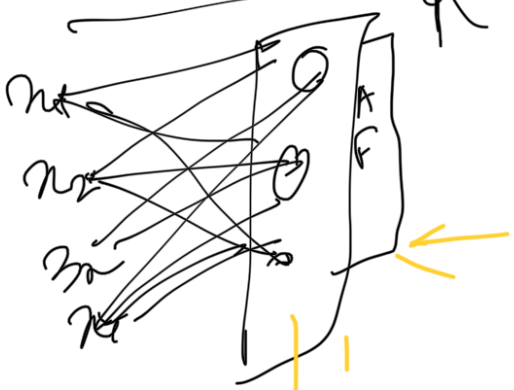
y = mx + c ⟶ $\frac{1}{1+e^{-y}}$ = (0, 1)

Doesn't Linear | logistic regn — Two ...

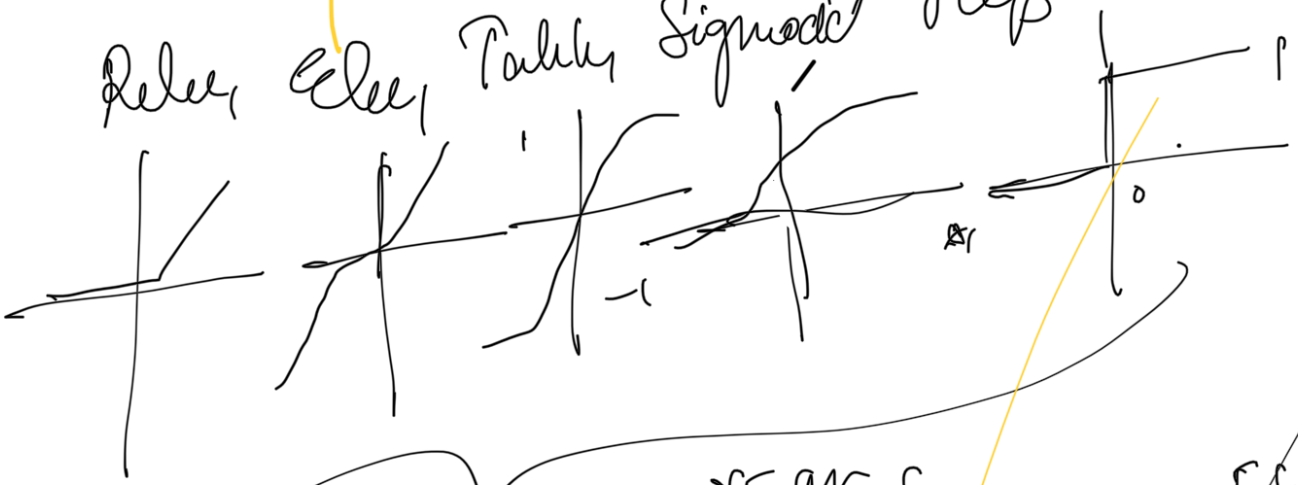
Introduce Non-linearity

Intentionally

Via Activation function



Relu, Elu, Tanh, Sigmoid etc



Read about units an article

Why Relu, Elu is preferred over Sigmoid / Tanh