GEN AI

AI → think & Learn Alan Turing John McCarthy Marvin Minsky

create a mimic intelligence → human intell

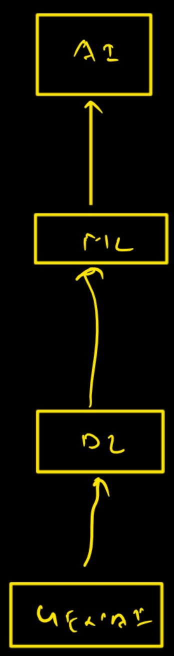
AIM — understand the Process the image human

Logic like human

Domain ⇒ MR, Man, e-comm, education, Retail, Logic, supply chain

→ GenAI ⇒ AI

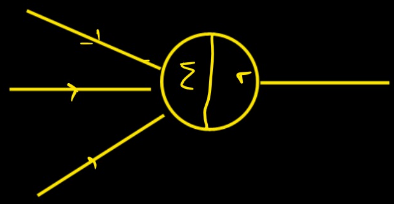
Superset



History ⇒ 1950 - 1960

1. Rule based → condition — more & less
2. Perceptron (1958)

human neuron ⇒



Neuron

1960-1970

Rule ⇒ DS → knowledge based → semantic meaning

Expert ⇒ Path finding, Problem searching, traversal → tree & graph

{BFS, DFS, universal cost search.

1970-1980

Machine learning

mathematical

Applied ML

1. Calculus
2. Probability
3. Linear algebra
4. Stats.

Supervised → X Y — loss — optimization

Unsupervised → Clustering & grp — X_1 X_2

Reg & classification similarity

1950-1980

Statistical

- lin reg
- log reg
- naive
- ...

DT

⇒ Manual — Model building — optimization

m/c

1980-1990

→ 1980 → GM — BP

1985 — RNN → sequence

2000 — CNN — vision arch.

1990-2000 — SVM, RB, LSTM, CNN, boosting

Classical AI

rule

human rule base

Modern AI

algorithm

flexible → adapt

Deep learning

2006 → Deep belief n/w hinton

2012 — Image net

2014 → GAN

2014 → Encoder/de

2017 — transformer

2018 — GAN

2015

ERD

2018 ERD

2010 → DNN

2017 → BERT

Where genAI comes ⇒ Deep Learning based

ANN

Gen + AI ⇒ NN

Gen → generation

Descriminative model v/s Generative model

{classification, Regression}

CNN

LSTM

Linreg → model

limited → choose pre prediction → Regression

domain

Image

Cat & Dog

your name

supervised train

Dibete

sentiment

Generative model → model

train

Data

text, images, videos

Generation

1. image to img generation
2. text to img gen
3. text to text gen → LLM
4. img to img → GAN

Vertex → Multimodal

Generation =>

1. Markov
2. Autoencoder
3. Variational Auto
4. GAN

Img to Img => GAN

Generation => LLM, LLM — GPT, ...

Diffusion, (multimodel)

Vision model