Agenda

1) Introduction → Traditional ML → MCP or A2A
2) Pydantic Python

Prequisitics → Python → Must

2013-2014 → Statistics → Conclusion

⇓

Statistical analysis ⇒ Observation, conclusion.

Machine Learning Algorithm : DATA → Model → Pattern of DATA → Predictions.

Independent And Dependent features

f1 f2 f3 f4 — O/P — TABULAR

House size — Area — Price — O/P

ETL

2011 ⇒ BIG DATA FEATURES

BIG DATA ⇐

2007 : Fb, Instagram, Whatsapp

Huge amount of DATA

⇓

STORE

EXTRACT → TRANSFORM → LOAD ⇒ DATA Scientist

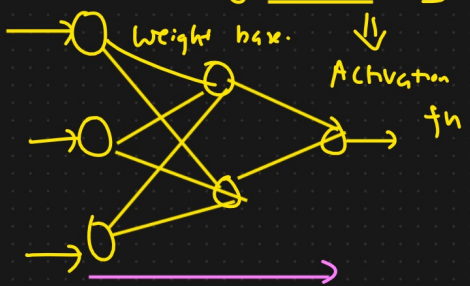
AI → Use this DATA → PATTERNS → Understand our customer.

Recommendation Engine. : Sapient

Neural NW

Multi layered NN.

$y = w^T x + b$



$w' = w - \alpha \frac{\partial h}{\partial w}$

DEEP LEARNING

- Tabular DATA → ANN
- Images → Computer Vision
  - CNN
  - ALEXNET, ROSNET
    VGG16, INCEPTION
  - Detectron2
  - RCNN
  - MASKED RCNN
  - YOLO
- NLP
  - RNN
  - LSTM RNN
  - BIDIRECTIONAL LSTM RNN
  - Encoder Decoder
  - ATTENTION IS ACE YOU NEED
  - TRANSFORMERS → GENAI
    - LLMS → NLP → TEXT
    - GAME CHANGING

2K +

NLP DATA = Text

3 Core : DATA SCIENCE + GENAI → MARCH

Agentic AI →

Generative AI

Dataset

UPSC

1 year

8-9 Subjects

10 Subjects

Books

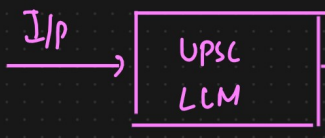
Newspaper

Test paper

1st RANK

Examiner ← Metrics

Metrics



[Generate]

Open AI

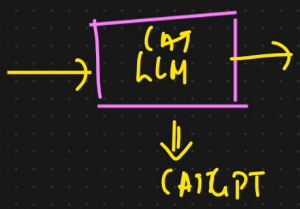
LLM Model

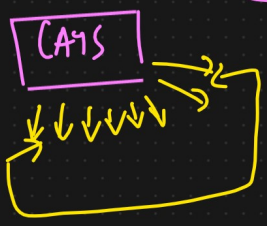
Google Gemini Model

LLAMA

HALLUCINATED

GaurdRails





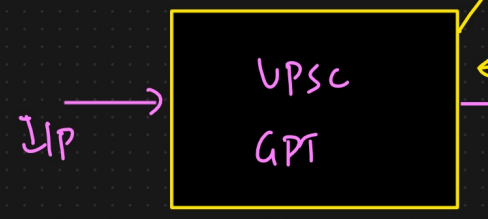
RAG → Retrieval Augment Generation

UPSC → PRELIMS, MAINS

NEWSPAPER ⇒ 30 days

⇓ External DATA SOURCE

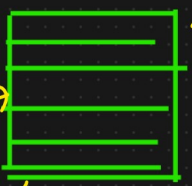
LAST Month



Vector DB ⇒ DB

30 days

{ Tell about Today NEWS }



Vector DB ⇒ Vectors

Text ⇒ Vectors

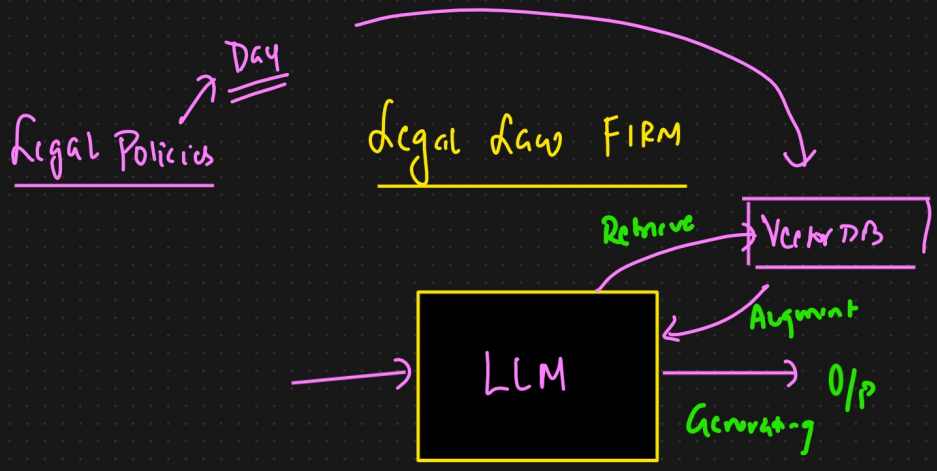
Embedding 10th May

Context

O/P

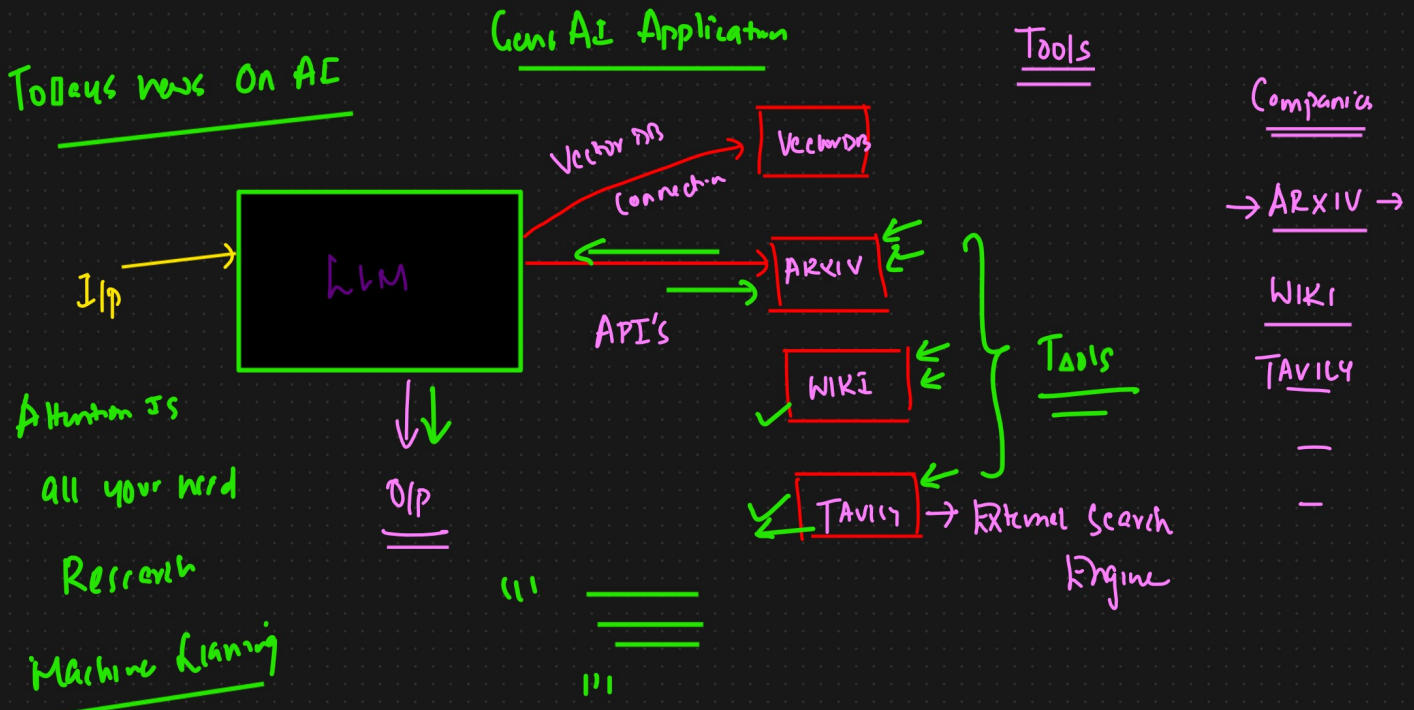
Prompt ←

TRADITIONAL RAG's => Agentic RAG

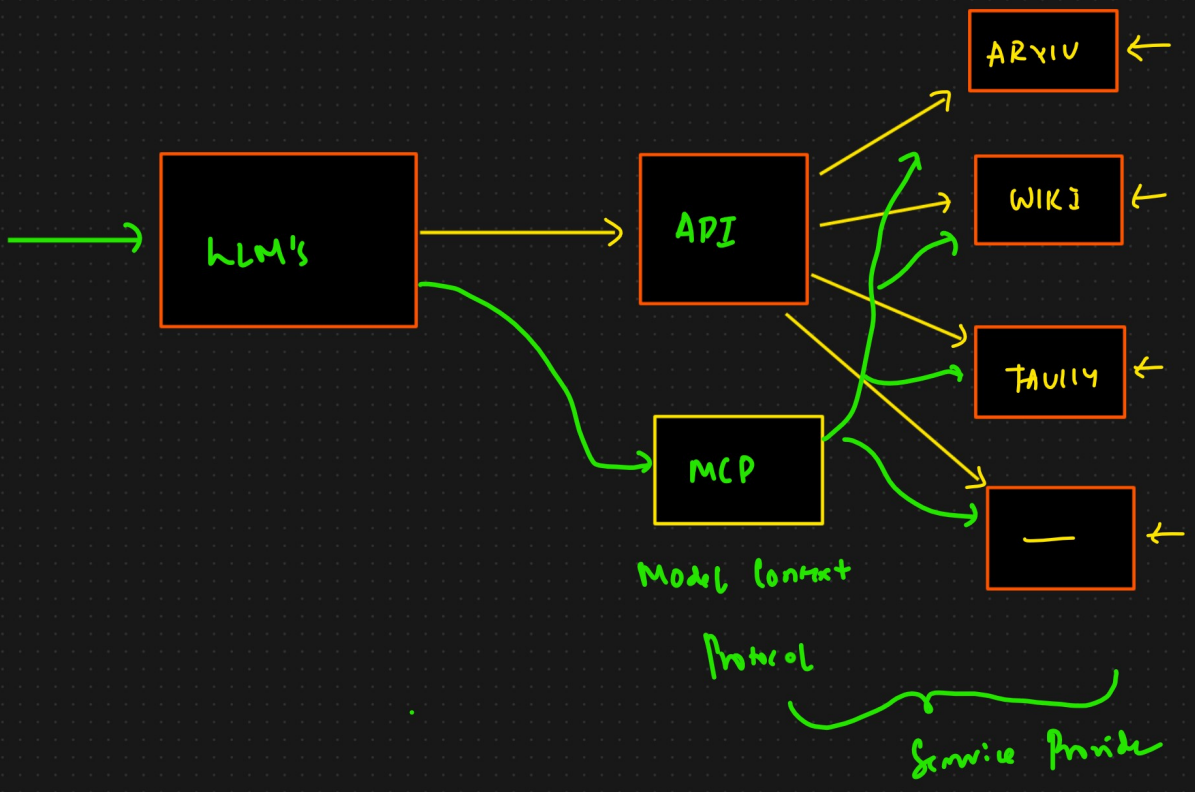


RAG

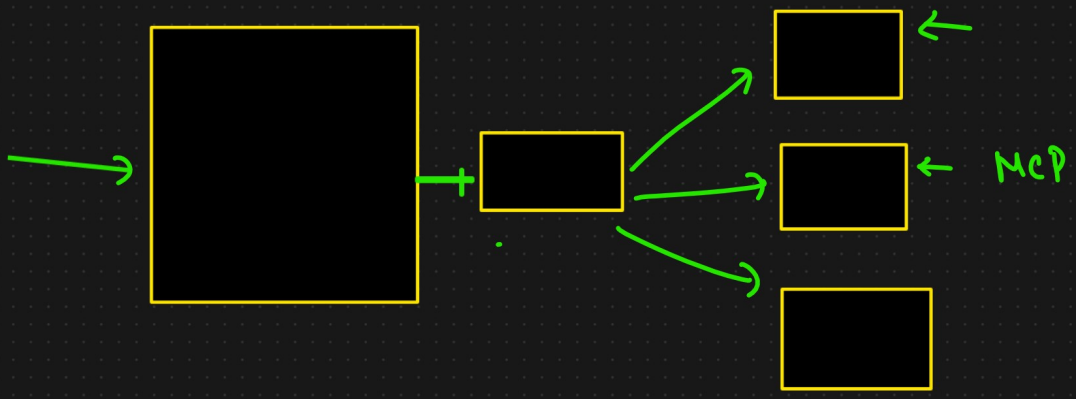
Pinecone.
Chroma DB
DATASTAX
Qdrant
ASTRA DB
FAISS DB



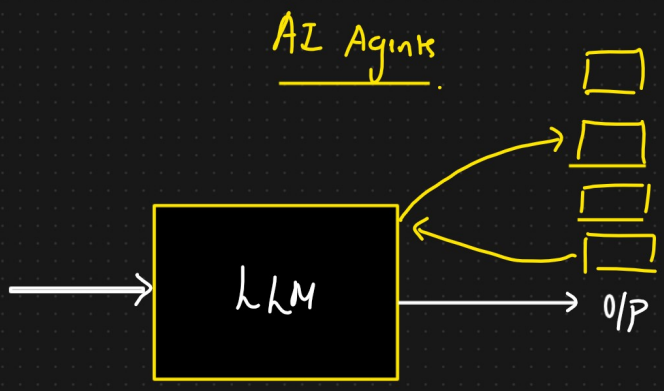

```
func ():
    """
    Comment In python
    """
```


ARXIV
WIKI
TAVILY
LLM's
API
MCP
Model Context
Protocol
Service Provide


MCP
Protocol


MCP

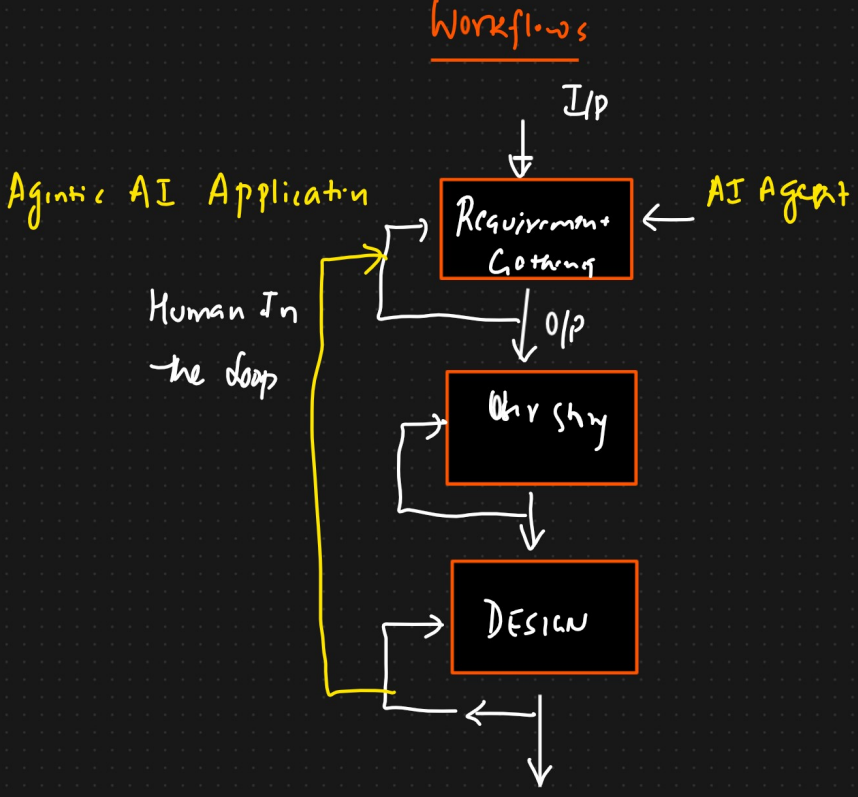
Generative AI Vs Agentic AI



Agentic AI → Complex Workflows → SDLC

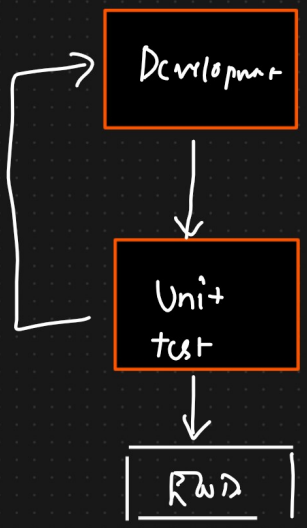
LLM + Human Feedback

1) Requirement Gathering : Business Analyst, Product Manager
2) Documentation And User story : BA
3) DESIGN ←
4) Development ←
5) Testing ←

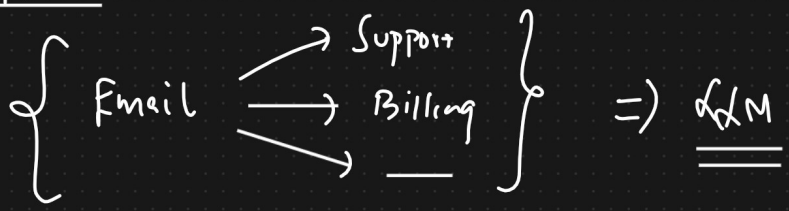


Industry Process

AI Agents Vs Agentic AI



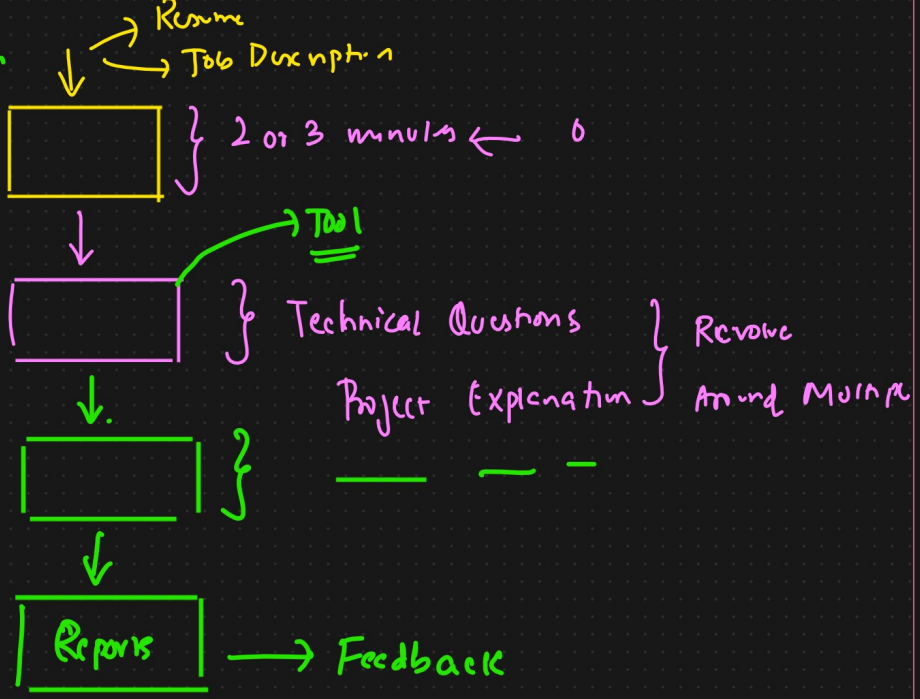
Automate Ticket Support



Mock Interview ÷ 15 minutes → B2B

B2C

face Detection



Pydantic → FAST API ←

DATA Model

Class

{

name : "str"

Age : int

- : bool

}

/login

/get ⇒

HTTP Post/get → API's

JSON

Rust

Very very fast

{ DATA VALIDATION { "name" : "Krish" Age : 35 - : - }

⇒ DATA Type { Type hinting }

DATA CLASSES ⇒ DATA VALIDATION //.

YT to Blog

1) YT video → TRANSCRIPT

2) TRANSCRPT → Blog Headline : String

→ Blog Content : String

→ Conclusion : String

LLM → Class (BaseModel)

{

headline : str

content : str

Conclusion : str

}

→ LLM →