# Agenda
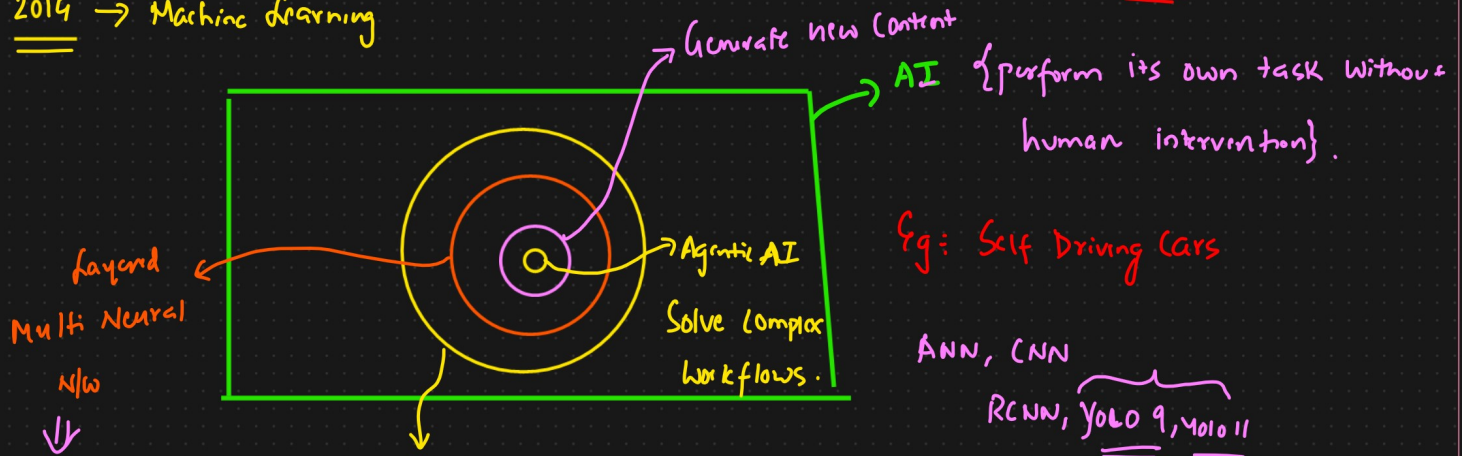
1) ML, DL, Generative AI, AI Agents, Agentic AI }

2) V.s Code   { Environment } ⟶ Projet } ⟶ package management }

2014 ⟶ Machine Learning
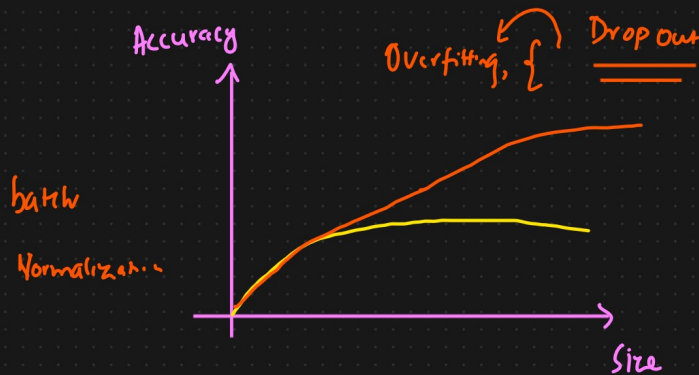


⟶ Generate new Content

⟶ AI { perform its own task without human intervention}.

Eg: Self Driving Cars

⟶ Agentic AI
Solve Complex
workflows.

ANN, CNN

RCNN, YOLO 9, YOLO 11

Layered
Multi Neural
N/W
⇓
Back propogation.

Stats tool to analyze, visualize, prediction of the data.

Accuracy

Overfitting, {   Drop out

DATA ⟶ Higher dimension

batch
Normalization

$f_1$   $f_2$   O/P     { 2 dimension }.

Size

Price of a house In Mumbai.

Dimension of features also Increase.

—   —   —   Sea view   Celebrity   Size   No.of bedroom   Price

Saturation point ⟶ Dimensionality is Increasing.

2011

NLP Text DATA

Text ⇒ | Models | ⇒ O/P
     ↳ vectors  ↑

Sentiment Analysis ⇒ ML Algorithms

Text DATA ⇒ vectors ⇒ ML Algorithms

I am RRISM ⇒ [0.2  0.4  0.6  0.8]

{ OHE

BOW, TFIDF, NGRAMS, Word2vec, Avgword2vec

Vector Database : Vector ⇒ Text ⇒ pdf, video, blog

⇑ Cosine Similarity ⇒ RAG ⇒ Similarity Search

Question
⇓
Vector

RAG

Vector DB → O/p
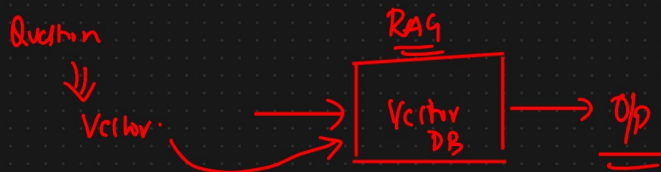
ML Algorithms ⇒ Training will not happen Efficiently

Naive Bayes    { Sparse format}.

RNN, LSTM RNN, RNN GRU, Encoder Decoder, Attention IS ALL YOU NEED,

TRANSFORMERS , BERT

↳ Self Attention

Encoder          Decoder

Recoranters ÷ GPT          DATA ↑↑          Accuracy ↑↑↑

Google Gemini:
⇓
BERT

Meta

LLAMA  ⇒ Transformers

3.3

TEXT DATA ←

I/P → **ML Model** → O/P
↓ 55%
**DATASET** ↗
↓
Outside
BAD

I/P → **DL Model** → O/P ↑↑↑ 68%.

Prelim
Main
Interview

{ 11 subjects }

UPSC Exam → 

[ Books, Subject, News Paper. — — — — — Internet — · — ]

Huge DATA
↓

I/P → **UPSC Model** → O/P

python

I/P → **LLM** → O/P

Engineering

Prompt

03 mini

Generative AI

Deep Seek

□ □ □ ← Reinforcement

Trained =) Last Month

**hLM** → Lawyer
↘ Financial
↘ Slow Developer
↘ Politician

I/P → **Generative AI LLM** → Generate → O/p

Prompt

{ API }
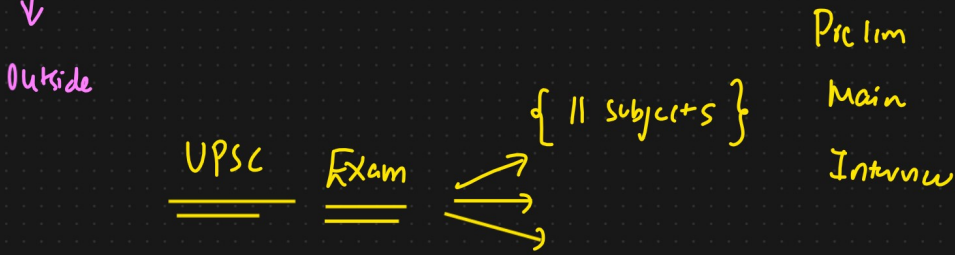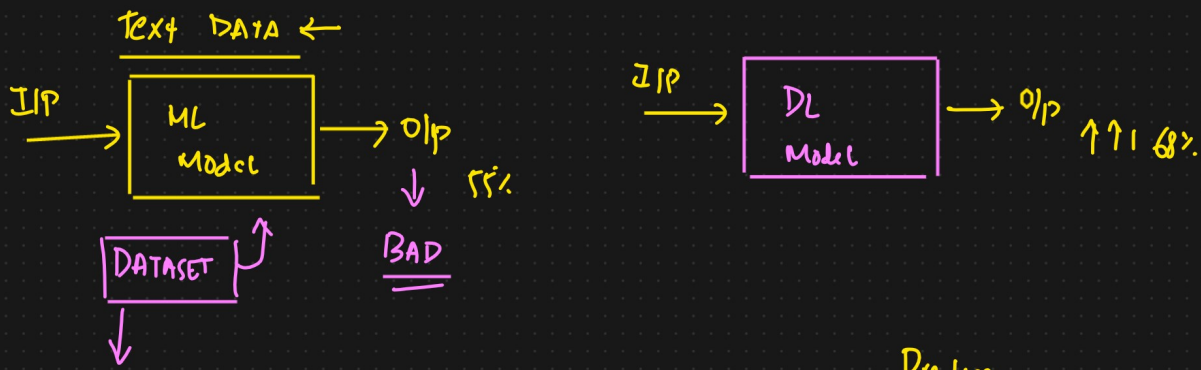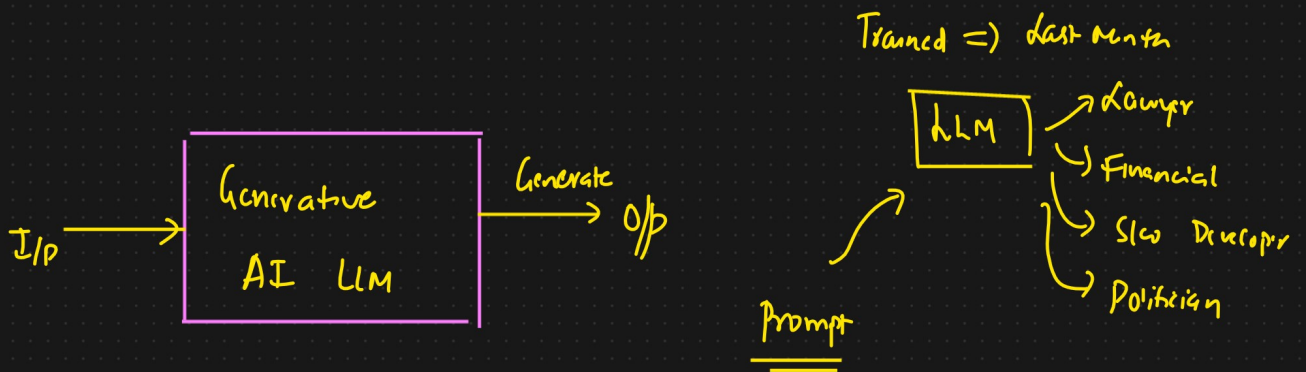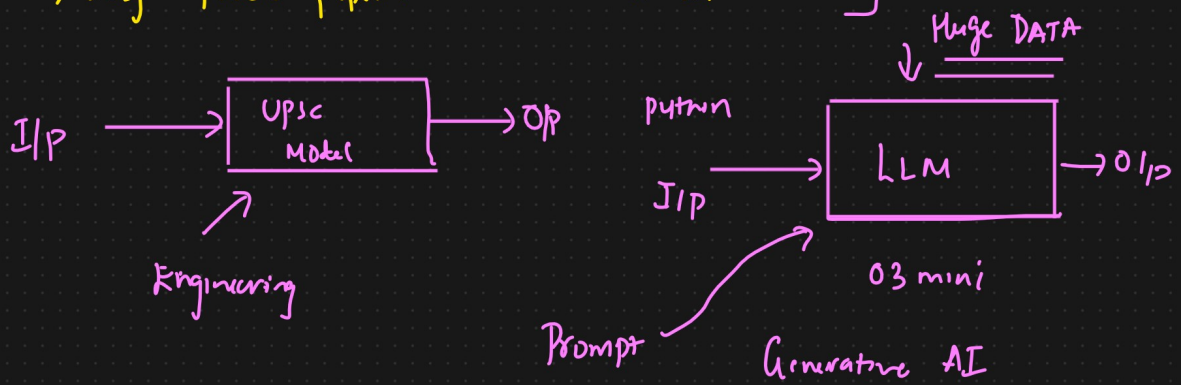
Tell me today News

External Source.

**INSHORT APP** News App

Budget — **LLM** → O/P 12 lakhs { memes }

SERPAPI → Web search ⎫
Provide → **LLM** ⎪
me the ⎪
top news       TAVILY ⎬ **External Source**
AI 2025       DuckDuckGo ⎪ ⇓
      Search ⎭ **Tool**

What is 2+2

       Calculator → **Tool**

      DuckDuckGo Search
       → Web search
**LLM**
           ✓ Research paper
Attention Is     Arxiv → O/P
All You Need

⇓

Transformer

**AI Agents    VS    Agentic AI**

| AI Agents | → Google Search
| Calculator | → Calculation

**Blog Page :**

    **YT API's**

                     Transcript → YT

                         ⇕    Combine
                      Summarize the   Agent → O/P
                      content
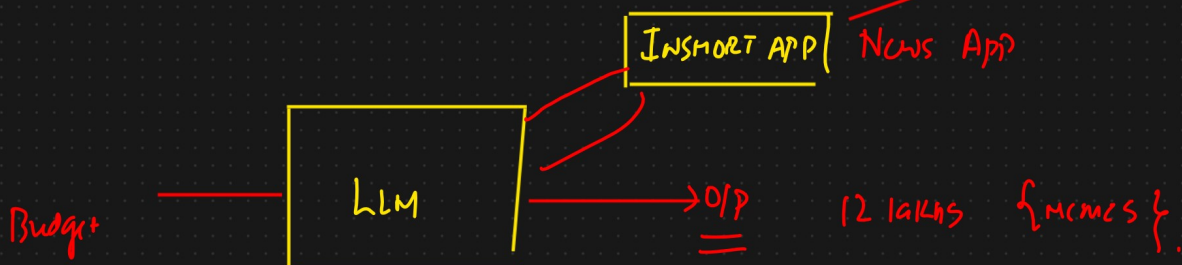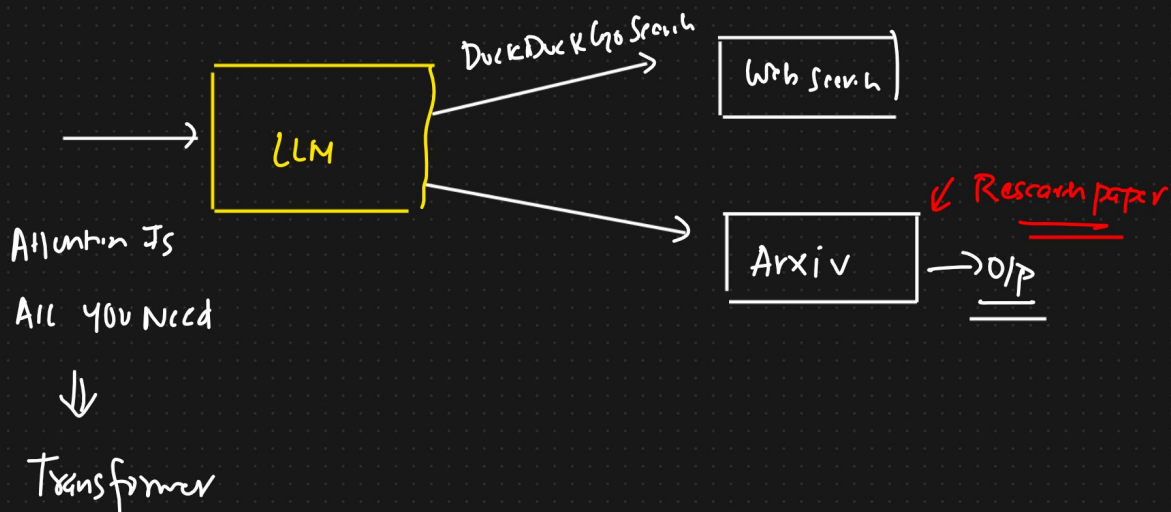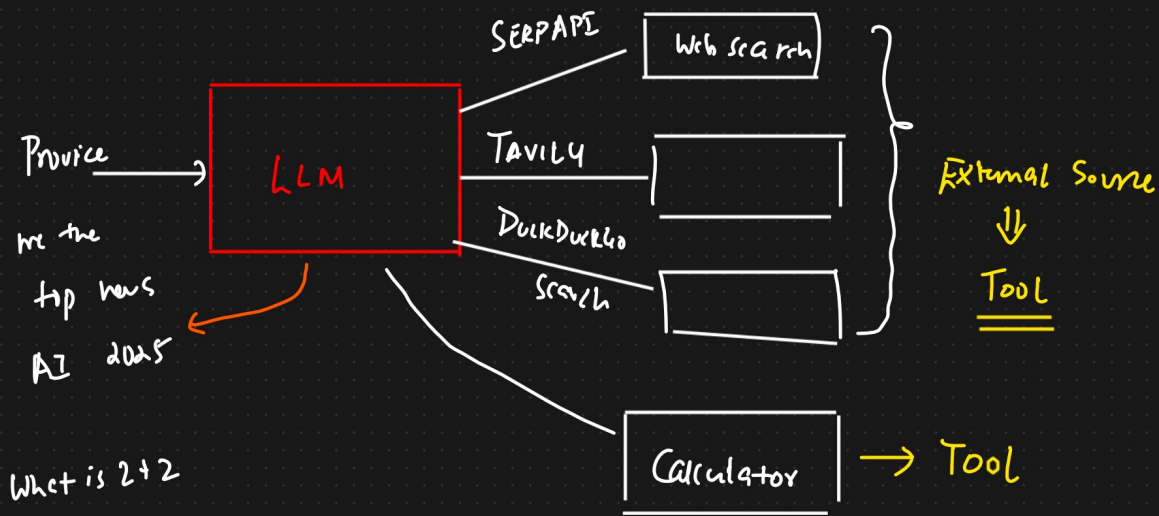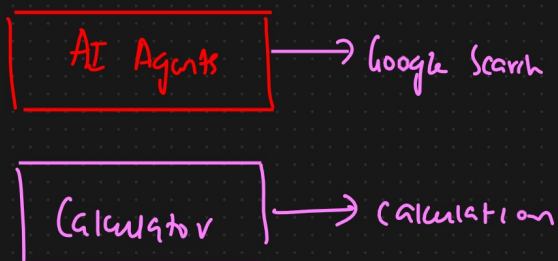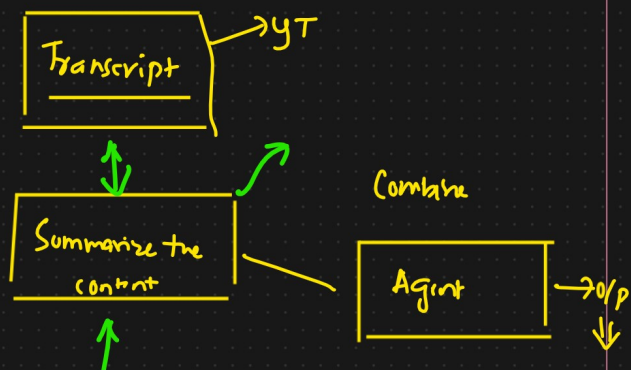
## 1 Developer

### Decision

**phidata**
↓ ↓
langgraph    Agon    Crew AI

format code Coder ← Github link    Blog
↓
Coder      Website

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## Development Team

Complex Workflow

Product Manager    PM Agent

Business Analyst

Requirement → Sprint 1 ←
       → Sprint 2 ←
       :

Environment

Code → Reviewer

Developer → Reasonebt LLM

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## Virtual Environment

Multiple Projects

| Python : 3.10 | 3.11 | 3.9 | 3.12 |
|---|---|---|---|
| ↳ Web | ↳ AI | ↳ | ↳ EDA |
| ⇓ | ⇓ | ⇓ | ⇓ |
| Environment | Enviro | Env | Env |
| ↑ | ↑ | ↑ | ↑ |

⇓

Package. =) CI/CD
↳ pypi    ↓
      Aws