Training Day 2 Report

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Generative AI or Gen AI is a type of artificial intelligence that can generate new content (images, text, videos, codes etc).

In previous era, we were solely focusing on classifications based on predictions.

Gen AI Tools:

ChatGPT	Gemini
DeepSeek	Dall e
Copilot	Grok

- ## ChatGPT:

  ChatGPT s a series of popular generative AI models developed and maintained by OpenAI.

- ## DeepSeek:

  Unlike traditional AI firms that operate on closed-source, high-cost models, DeepSeek follows a more open-source approach, providing developers and businesses access to cutting-edge AI without excessive price barriers.

- ## Copilot:

  a **copilot** refers to an **AI assistant** that helps users write code, documents, or perform tasks.

- ## Gemini:

  Gemini is also the name of **Google's AI model**, designed to compete with OpenAI's ChatGPT.It helps in tasks like writing, coding, searching, and answering questions.

- **Dall e:**

  DALL·E (pronounced like "Dolly") is an **artificial intelligence program** that takes a text prompt and creates a matching **realistic or artistic image**.

- **Grok:**

  Grok is a free AI assistant designed by xAI to maximize truth and objectivity. Grok offers real-time search, image generation, trend analysis, and more.

Internet Architecture:

Input → Processor → Output

Generative AI Architecture:

Prompt → Model → Generated Content

AI Models:

Every AI Models are based on LLM. AI models are **mathematical and computational frameworks** designed to perform tasks such as classification, prediction, decision-making, or pattern recognition.

There are some models like:

- GPT 3.5/GPT 4.0
- Claude 3
- Whisper/Google Speech
- Gemini 1.5
- LLaMA 3
- Codex

LLM (Large Language Model):

LLM is a type of AI trained to understand and generate human like text. It uses vast database like books or websites to learn patterns language.

Example: ChatGPT, Google.

Key Terms Commonly used:

- Tokens
- Parameter
- Prompt
- Fine-Tuning
- Inference

Applications:

- CharBots:24/7 Customer Support
- Education: Personalized Tutoring
- Healthcare: Summarizing Records
- Legal: Drafting Contracts
- Writing: Blogs, Poetry, Code

Limitations:

- Hallucination
- Bias
- No real understanding
- Context length

Ethical concerns:

- Misinformation generation
- Data privacy
- Deep fakes

Inside the LLM – Transformers

Text data ----Tokenizer----Language Model-----output

*Self attention (model finds which word relate to each other)

*Feed Forward Network (learns deeper features)

*Positional Encoding (remember word order)

Training LLMS (behind the scenes)

Pretraining : read tons of text -----predict the next word

Fine tuning : refine on specialized data

RLHF(reinforcement learning with human feedback) : people keep it learn better responses .

Eg: Teaching a parrot basic words----later refining to speak in sentences.