

Summarize Prompt Engineering

Course By Mayer Waheed Nawas ...

Generative AI : Introduction

models they do store data and use it in what i need ex:(post on linkedin , generate text from image) . These models are Subset of AI Subset of machine learning Subset of Deep learning . The **Steps how to work**

① understand text

② Preprocess it

③ Generate answer

④ Alternative response

Popular Tools: ChatGPT , Gemini

Key benefits: Learn easily and quickly in every things .

Questions

Answers

1. Not key benefit of Generative AI?

Memory data entry.

2. Company we way different itself from Computer using GenAI?

Provide explain and ethical aligned AI

3. Can improve accessibility by?

Translate Content, Simplify lang.

develop AI

Fundamental
Concept

→
Neural
Network

Emergence
Deep learning

→
Rapid
Expansion

Real Word Application

- ⇒ Computer Vision
- ⇒ Robotic

How it works

Statistical generation models: are probability-based models that learn the underlying distribution data . They use (P_x) function to represent likelihood of given data (x) , Once trained, the model can generate new, similar, samples

by drawing from this learned distribution. These model rely on prior knowledge like assumed form of distribution, loss

function and an optimizing algorithm to adjust the model parameters.

key Difference between :

Gen AI	discriminative AI
Create new	Discrimination
Content from	data such as
existing data	dog, Cat, etc

Unlocking AI from Productivity

how to write better questions and instructions for AI modeling like GPT.

The main idea is that the way you write a prompt really affects the answer you get from AI. That's clear and specific language it helps AI give better response. And you can try different prompt to improve it.

Using English language make prompt more effective. That's save time and increase productivity in real work.

When Context window is full the output AI is bad.

Example websites

Leaderboard : each type and classification
is best used by people

Tiktokenizer

how LLMs show my text
message

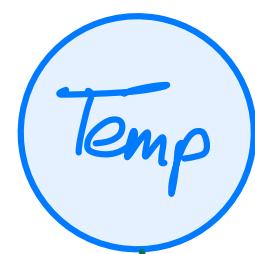
Few shot	Zero shot
<ul style="list-style-type: none">→ specific answer to LLMs→ more precise	<ul style="list-style-type: none">→ depend on preise learning AI [usually use]→ faster

Types LLMs :

- System Prompt
- Role Prompt
- Reasoning AI [CoT]
- Contextual Prompt
- Think before Action

Advanced Prompt

Technique	What It Controls / Does	Use Case Type	Helps With	Complexity Level
Temperature	Controls randomness and creativity	Text generation	Creative writing or focused answers	Basic
Top-p	Filters tokens by probability (nucleus sampling)	Text generation	More logical and relevant responses	Basic
Self-Consistency	Generates multiple answers and selects the most consistent one	Analytical tasks	Improves accuracy and confidence	Intermediate
ReAct (Reason + Act)	Encourages step-by-step reasoning before final output	Instruction-based tasks	Better logical thinking and decision-making	Intermediate
Tree of Thought	Explores multiple reasoning paths in parallel	Complex decision-making	Enhances structured thinking	Advanced
Function Calling	Allows calling external functions or APIs	Programming / Integration	Real-time data access and API usage	Advanced



Randomness score in response from AI the higher it was, the more creative



The most likely words when the model allow to used
(Nucleus Sample)



instead of taking the first answer from AI, you asked from several answer, choose most them.



way for AI explain Step of its thinking before making decision/ implementing the request.



The model thinks more than one possibility in parallel and choose the best among them.



Allow the model to call external fun. to retrieve data or execute soft. opre.

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Specialized AI Tools

Marketing

Copy.ai
Chat GPT
Notion AI
Tidio
Miro AI

Developing

Continuous Dev
Code Karma
Star Counter
Offnames
Cobilot

Designing

Looker
Magic design
Canva
Kiteme

Product Hunt website → update everyday event links.

NN - workflow automation (Part 1)

Workflow Automation : The core concept revolve around automating repetitive tasks in daily life work or studies. Examples: sending emails transferring files and update codes across different platform. These powerful tool to both technical and non-technical users because provide time-saving , efficiency gains , accessibility , integration , flexibility , Cost and hosting options .

Part 2

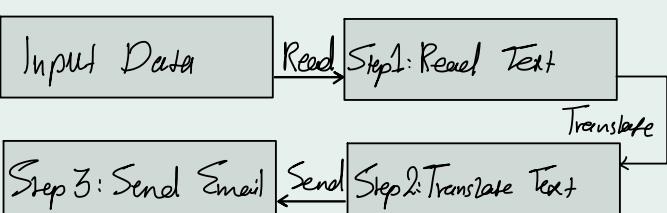
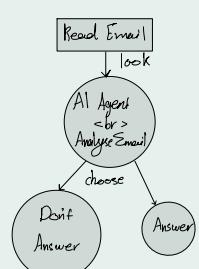
Triggers → Things that display how begin Automation operation .

Webhook APIs → Steps from Start information

and at end that's output information .

Logic & helper Nodes → provide API

smooth and work very well.

AI workflow Automation	AI Agent
Regular Steps with one or more action "without choose"	As the same workflow but main different is "with choose"
	

Resources for VS Code AI assistants and discovering new open-source projects

1. Open-Source AI Coding Assistants

◆ Continue.dev

Open-source alternative to GitHub Copilot for VS Code

 <https://continue.dev> License: MIT

◆ CodeLlama

Meta's open LLM specialized for coding (Python, C++, Java, etc.)

 <https://github.com/fac...> License: Custom (non-commercial use allowed)

◆ StarCoder

15B parameter model by BigCode for code generation

 <https://huggingface.co...> License: OpenRAIL

◆ Ollama

Run large language models locally on your machine

 <https://ollama.ai> License: MIT

2. Discovering New Open-Source Tools

🔍 GitHub Resources:

- GitHub Explore – <https://github.com/exp...>
- AI Topics on GitHub – <https://github.com/top...>
- AI Collections – <https://github.com/col...>

🌐 Alternative Platforms:

- LibreOps – <https://libreops.cc> – Privacy-focused decentralized tools
- AlternativeTo – <https://alternativeto.net> – Open-source software alternatives
- LWN.net – <https://lwn.net> – In-depth open-source news

💬 Community Resources:

- r/opensource – <https://www.reddit.com...>
- r/selfhosted – <https://www.reddit.com...>
- FOSS United Matrix Chat – <https://matrix.to/#/#fossunited:matrix.org>

3. Automated Tracking Tools

◆ RSS Feeds

- Use RSS-Bridge to create custom feeds – <https://github.com/RSS...>
- Add .atom to GitHub repo URLs for native feeds

◆ Telegram Bots

- @GitHubTrending – <https://t.me/GitHubTre...>
- @opensourceupdates – <https://t.me/opensourc...>

📎 Additional Resources

- Open Source Initiative – <https://opensource.org/>
- FOSS Jobs – <https://www.fossjobs.net/>
- Awesome Lists – <https://github.com/sin...>