

Hands-on - Prompt Engineering with ChatGPT

Instructor

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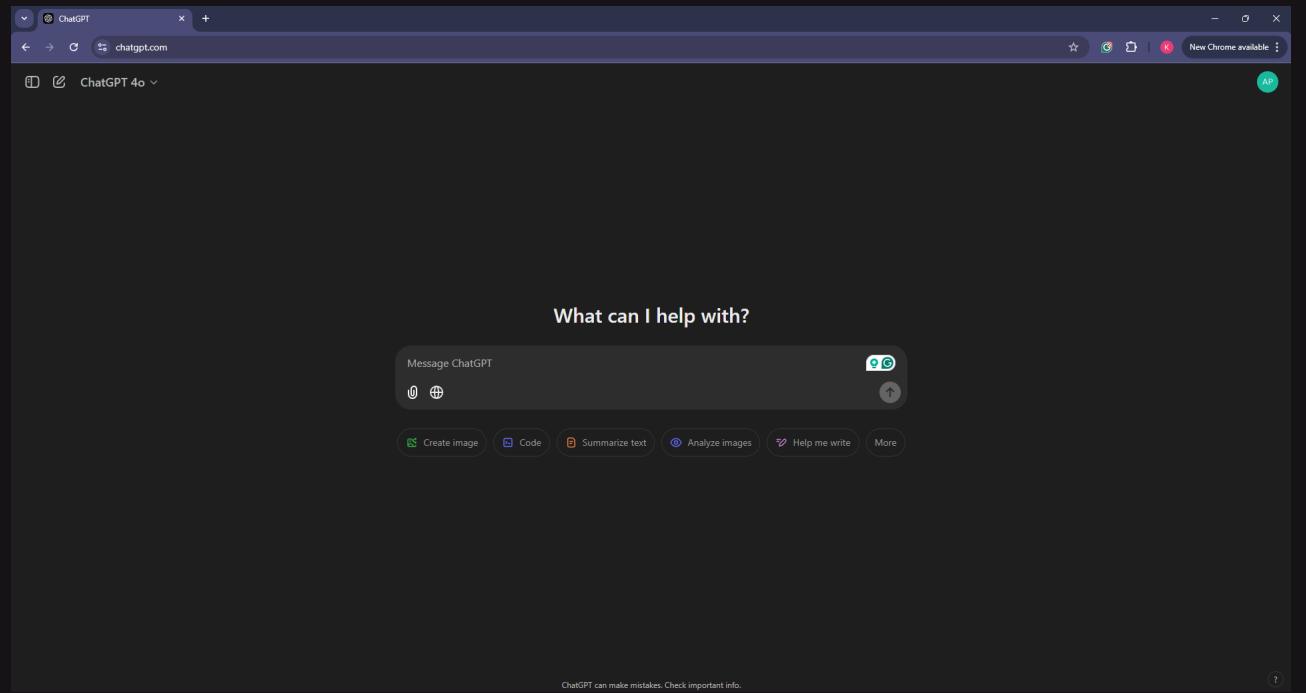
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How to access ChatGPT?

- The most common way of accessing ChatGPT is through the web interface at <https://chatgpt.com/>
- There is also paid API access, which we will use with Python in later modules.
- ChatGPT, based on the GPT-4o model, is currently free to use.
- There are larger request quotas for advanced models, along with plugins, Custom GPTs, and Search for Plus subscribers who pay \$20 per month.



How to use ChatGPT?

- The inputs to GPTs are also referred to as "prompts"
- Designing a prompt is essentially how you "program" or "instruct" a ChatGPT model
- This is usually done by providing instructions or some examples of how to successfully complete a task
- Systematic ways of creating prompts are known as prompt engineering patterns

Input

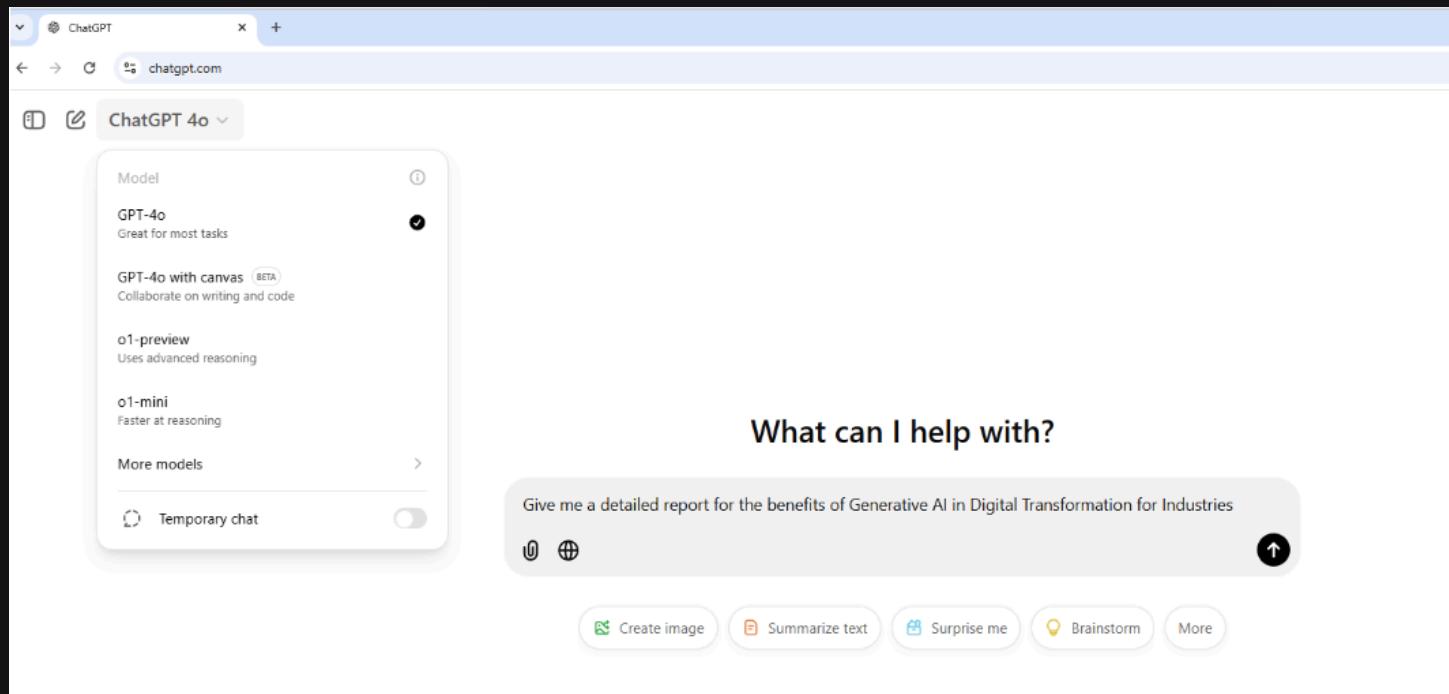
Andrew is free from 11 am to 3 pm, Joanne is free from noon to 2 pm and then 3:30 pm to 5 pm. Hannah is available at noon for half an hour, and then 4 pm to 6 pm. What are some options for start times for a 30 minute meeting for Andrew, Hannah, and Joanne?

Output

Andrew: 11 am - 3 pm
Joanne: 12 pm - 2 pm, 3:30 pm - 5 pm
Hannah: 12 pm - 12:30 pm, 4 pm - 6 pm

Common availability for a 30-minute meeting: 12 pm - 12:30 pm

Prompting on ChatGPT - Generation Task



Give me a detailed report for the benefits of Generative AI in Digital Transformation for Industries

Detailed Report: Benefits of Generative AI in Digital Transformation for Industries

Digital transformation (DX) is the integration of digital technologies into all areas of a business, fundamentally changing operations, customer experiences, and business models. Generative AI (GenAI), a subset of AI capable of producing new and innovative content, plays a pivotal role in accelerating and enhancing digital transformation across industries.

1. Enhanced Innovation and Creativity

Generative AI enables businesses to:

- **Create New Product Designs:** AI-generated prototypes for automotive, consumer goods, and fashion industries reduce design time and enhance creativity.
- **Develop Marketing Content:** Automate the creation of personalized ads, videos, blogs, and social media posts, increasing engagement and reducing costs.
- **Optimize Research and Development:** Accelerate simulations in pharmaceuticals and materials science, leading to faster breakthroughs.

2. Improved Operational Efficiency

Generative AI streamlines business processes by:

- **Automating Repetitive Tasks:** Generate reports, summarize documents, and draft emails, freeing employees for strategic tasks.
- **Optimizing Supply Chains:** Predict demand, generate procurement schedules, and improve inventory management through real-time simulations.
- **Enhancing Data Processing:** Transform raw data into actionable insights through automated

Prompting on ChatGPT - QA Task

Explain what is LangGraph and its key features only based on your trained knowledge. Do not use any external tools. If you do not know the information state clearly the reason also.



I do not have information about "LangGraph" based on my training data up to October 2023. It could be a newer framework, tool, or concept introduced after my knowledge cutoff or a less widely documented tool. If you could share more context or details, I'd be happy to help explain or infer its potential use case based on related concepts.



Prompting on ChatGPT - Agentic QA with Tools

Explain what is LangGraph and its key features. If you do not know the answer you can leverage search tools and tell me about it.

 **LangGraph - LangChain**
langchain.com 

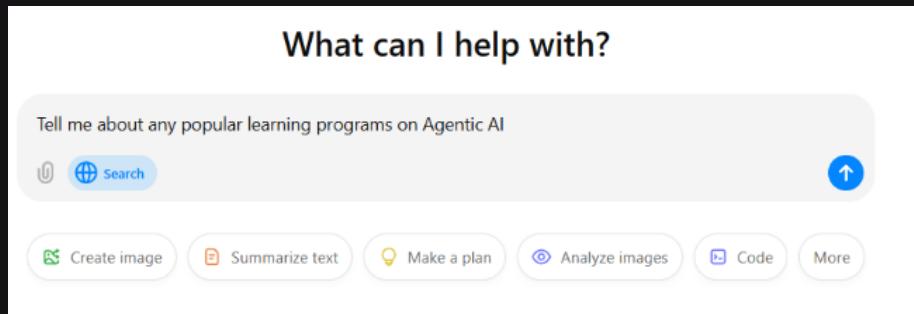
LangGraph is a framework designed to build stateful, multi-actor applications utilizing Large Language Models (LLMs). It enables the creation of complex agent and multi-agent workflows by representing them as graphs, where each node signifies an agent or function, and edges define the flow of information between them. This graph-based approach facilitates the modeling of intricate interactions and control flows, including cycles and branching, which are essential for developing sophisticated agentic architectures. 

Key Features of LangGraph:

- **Cycles and Branching:** LangGraph supports the implementation of loops and conditional paths within applications, allowing for the development of dynamic and adaptable workflows.

- **Persistence:** The framework offers built-in persistence, automatically saving the application's state after each step. This feature enables pausing and resuming executions, facilitating error recovery, human-in-the-loop interactions, and the ability to "time-travel" within the application's state. 
- **Human-in-the-Loop:** LangGraph allows for the interruption of graph execution to incorporate human input, enabling approval or modification of the agent's planned actions. This integration ensures that human oversight can be seamlessly included in the workflow. 
- **Streaming Support:** The framework provides native support for token-by-token streaming and streaming of intermediate steps. This feature enhances user experience by displaying agent reasoning and actions in real-time as they occur. 
- **Integration with LangChain:** LangGraph integrates seamlessly with LangChain and LangSmith, leveraging their capabilities for model interactions and observability. However, it can also function independently without requiring these integrations. 

Prompting on ChatGPT - SearchGPT



Tell me about any popular learning programs on Agentic AI

Share

Citations

Analytics Vidhya
Agentic AI - Analytics Vidhya
March 24, 2023 — Lead the AI Revolution with Agentic AI Pioneer Program. 150+ Hours of Building...

Coursera
AI Agentic Design Patterns with AutoGen - Coursera
About this project. In AI Agentic Design Patterns with AutoGen you'll learn how to build and customize...

Coursera
ChatGPT & Zapier: Agentic AI for Everyone - Coursera
Agentic AI is a type of AI that combines Generative AI with tools and actions, allowing us to build "agents"...

Imagine | Johns Hopkins University
Agentic AI Fundamentals: Architectures, Frameworks, and Applications
Looking to dive into the world of agentic AI? This course covers the essential concepts, architectures,...

Search Results

Analytics Vidhya
Learning Path for AI Agents - Analytics Vidhya
October 21, 2024 — Step 6: RAG Systems Essentials. Step 7: Introduction to AI Agents. Step 8: Agentic AI...

Analytics Vidhya
Top 4 Agentic AI Design Patterns - Analytics Vidhya
October 21, 2024 — Agentic workflows enhance AI performance by refining tasks step-by-step, similar to...

Interface AI
What is Agentic AI - and Why Everyone's Talking About It
October 15, 2024 — The evolution from traditional AI to agentic AI signifies a leap forward in how systems...

The GitHub Blog

Analytics Vidhya

A screenshot of a search results page for "any popular learning programs on Agentic AI". The results are listed under the heading "Citations".

- Agentic AI - Analytics Vidhya**: A comprehensive program offered over 150 hours, covering the development of intelligent agents that can think, learn, and act autonomously. Participants engage in more than 20 hands-on projects and receive personalized mentorship to deepen their understanding of Agentic AI concepts and applications.
- AI Agentic Design Patterns with AutoGen by Coursera**: This course focuses on building and customizing multi-agent systems using AutoGen, a framework for developing applications with large language models (LLMs). Learners explore various design patterns, including reflection, tool use, planning, and multi-agent collaboration, to enhance the autonomy and intelligence of AI agents.
- ChatGPT & Zapier: Agentic AI for Everyone by Coursera**: Aimed at non-programmers, this course teaches how to utilize ChatGPT in conjunction with Zapier to create AI agents that automate everyday tasks across platforms like Gmail, Office365, and Google Sheets. It emphasizes practical applications, enabling learners to build agents that assist with task prioritization, expense tracking, and more.
- Agentic AI Fundamentals: Architectures, Frameworks, and Applications by Johns Hopkins University**: This course delves into the foundational aspects of Agentic AI, covering essential concepts, architectures, and frameworks that underpin autonomous agents. It explores decision-making processes, machine learning techniques, and multi-agent systems, providing practical knowledge for developing and deploying Agentic AI solutions.

These programs cater to a range of learners, from beginners to advanced practitioners, offering both theoretical insights and practical experience in the field of Agentic AI.

Sources

Prompting on ChatGPT - Live RAG on Files

The screenshot shows a ChatGPT interface. At the top, there is a document icon with the text "Hands On Guide to Multimodal RAG S..." and "PDF". Below this, a user prompt is shown in a grey box: "Explain to me how to build a multimodal RAG System step by step based on the relevant context from this document". A circular AI icon with a swirl pattern is on the left. The AI's response starts with "To build a multimodal RAG (Retrieval-Augmented Generation) system, follow these step-by-step guidelines based on the document:" followed by a horizontal line. Below this, a section titled "Step 1: Understand Multimodal Data" is listed with two bullet points.

To build a multimodal RAG (Retrieval-Augmented Generation) system, follow these step-by-step guidelines based on the document:

Step 1: Understand Multimodal Data

- **Definition:** Multimodal data includes text, images, tables, graphs, and optionally audio and video.
- **Objective:** Detect, parse, and extract these elements separately to generate embeddings for downstream processing.

Prompting on ChatGPT - Information Extraction

60-year-old man in NAD with a H/o CAD, DM2, asthma, pharyngitis, SBP, and HTN on Altace for 8 years awoke from sleep around 1:00 AM this morning with a sore throat and swelling of the tongue. He came immediately to the ED because he was having difficulty swallowing and some trouble breathing due to obstruction caused by the swelling. He did not have any associated SOB, chest pain, itching, or nausea. He has not noticed any rashes. He says that he feels like it is swollen down in his esophagus as well. He does not recall vomiting but says he might have retched a bit. In the ED he was given 2.5 mg Benadryl IV, 12.5 mg Solu-Medrol IV, and 20 mg IV. Family history of CHF and esophageal cancer (father).

Analyze this doctor clinical note and clearly show the major issues the patient is having, expand the abbreviations also in a neat table



Analyzed ▾

The OCR output is somewhat garbled, likely due to handwriting or image quality issues. I'll clean it up manually and expand the abbreviations based on the context provided.

Cleaned Text

- A 60-year-old man in no acute distress (NAD) with no history of coronary artery disease (CAD), diabetes mellitus type 2 (DM2), asthma, pharyngitis, supraventricular tachycardia (SVT), and hypertension (HTN). He has been on Altace (ramipril) for 8 years.
- He woke around 1:00 AM with a sore throat and swelling of the tongue.

Category	Details
Age and Status	60-year-old man, not in acute distress (NAD).
Past Medical History	CAD, DM2, asthma, pharyngitis, SBP issues, HTN (on Altace for 8 years).
Symptoms	Sore throat, tongue swelling, difficulty swallowing, trouble breathing due to obstruction.
Negative Symptoms	No SOB, chest pain, itching, nausea, or rashes.
Patient's Observation	Feels swelling extends to esophagus.
Vomiting	No vomiting but possible retching.
Emergency Treatment	25 mg Benadryl IV, 12.5 mg Solu-Medrol IV, 20 mg Pepcid IV.
Family History	CHF and esophageal cancer (father).

Prompting on ChatGPT - Data Analysis

Sales summary work report chart

Name	Bill	Beck	Bern	Ade	Alan	Allen	Bob	Brian
Sales Amount	809	682	426	258	369	478	596	287
Sales volume	56	24	15	35	42	17	59	37

Sales analysis chart

Analyze the data in this visual and tell me the top 3 salespeople

Based on the data provided in the chart:

Top 3 Salespeople by Sales Amount:

1. **Bill** - Sales Amount: 809
2. **Beck** - Sales Amount: 682
3. **Bob** - Sales Amount: 596

These salespeople have the highest sales amounts as represented in the bar chart and table.

Thank You
