

SVKM'S NMIMS NMINS EduGenAI

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NMIMS Vision

To be a globally admired University by 2030

NMIMS Mission

Emerge as a Centre of Excellence, best in class in India and Asia, and yearning to be the best in the world by 2030





GenAI Faculty Development and Workshops GenAI-Enhancing Teaching-Learning Process



GenAI- Progress Monitoring

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Preface

Warm greetings!

We are thrilled to present the second issue of our publication, following the overwhelmingly positive response to our inaugural edition. The feedback and reviews we received were not only encouraging but also filled with valuable suggestions that have helped shape this issue.

In this edition, we delve into the fascinating world of **prompt engineering**, exploring its various aspects, techniques and examples. We hope you find the content insightful and engaging. We look forward to your continued support and feedback.

Happy reading!

In this edition

- Introduction to Prompt Engineering
- Popular Prompt Engineering Techniques
- News and Events: August 2024
- GenAl Tools Use-Cases
- Latest Updates and Trends



NMIMS EduGenAI

Introduction to Prompt Engineering

Prompt engineering is a crucial aspect of working with large language models (LLMs) like GPT-4. It involves crafting precise and effective prompts to guide the model in generating desired outputs.

PROMPT ENGINEERING

By understanding the nuances of prompt design, users can optimize the performance of LLMs, ensuring more accurate, relevant, and contextually appropriate responses.

This skill is essential for developers, researchers, and anyone looking to leverage the full potential of generative AI technologies.

Common Pitfalls to avoid in Prompt Engineering

- **Ambiguity:** Vague prompts can lead to unclear or irrelevant responses. Be specific about what you want the model to generate.
- **Overloading:** Including too many instructions or details in a single prompt can confuse the model. Keep prompts concise and focused.
- **Bias:** Unintentionally embedding biases in prompts can lead to biased outputs. Be mindful of language that might skew the model's responses.
- Lack of Context: Not providing enough context can result in generic or off-topic answers. Ensure the prompt includes necessary background information.
- **Neglecting Iteration:** Prompt engineering often requires trial and error. Don't expect perfect results on the first try; refine your prompts based on the outputs you receive.



Popular Prompt Engineering Techniques

Here are some popular prompt engineering techniques that can help us in getting useful and effective responses from **GenAI** Tools:

Zero-Shot Prompting

Description: The AI model generates a response without any prior examples or specific training on the task.

Example: Asking the model to **explain a scientific concept directly**.

Prompt: "Explain the process of photosynthesis."

Response: "Photosynthesis is the process by which green plants and some other organisms use sunlight to synthesize foods with the help of chlorophyll. It involves the intake of carbon dioxide and water, and the release of oxygen."

Few-Shot Prompting

Description: The AI model is given a few examples to learn from before generating a response.

Example: Providing a few examples of math problems and their solutions before asking the model to solve a new problem.

Prompt: "Solve the following: 2 + 2 = 4, 3 + 5 = 8. Now, solve 7 + 6." Response: "7 + 6 = 13."

Chain-of-Thought Prompting

Description: The AI model is encouraged to think step-by-step to arrive at a solution.

Example: Asking the model to solve a complex **problem by breaking it down into smaller** steps.

Prompt: "How many apples will each person get if 12 apples are divided among 4 people?" **Response:** "First, we divide 12 by 4. 12 divided by 4 equals 3. So, each person gets 3 apples."

Instruction-Based Prompting

Description: The AI model is given explicit instructions on how to perform a task.

Example: Directing the model to write a summary of a given text.

Prompt: "Summarize the following paragraph: 'Artificial intelligence is transforming industries by automating tasks, improving efficiency, and enabling new capabilities.'"

Response: "AI is revolutionizing industries by automating tasks, enhancing efficiency, and introducing new capabilities."

Contextual Prompting

Description: The AI model is provided with context to generate a more accurate response.

Example: Giving background (context) before asking a question.

Prompt: "In the context of renewable energy, explain the benefits of solar power."

Response: "Solar power is a renewable energy source that reduces greenhouse gas emissions,

lowers electricity bills, and provides energy independence."

News and Events

NMIMS Faculty Lounge-August

Topic: FDP on Generative AI and Use-Case on Quiz Generation Series 1 |Episode 3

Day, Date and Time: Thursday, August 22, 2024 @ 04:00 P.M.

On Thursday, August 22, 2024, **NMIMS Shirpur campus** hosted third episode of virtual faculty lounge under the series- GenAI at NMIMS.



Key Highlights

Dr. Ramesh Bhat (Hon. Vice Chancellor) discussed the progress made by the GenAl anchor team in developing guidelines and policies for generative AI at NMIMS. He emphasized the need to pay attention to privacy and security issues when using cloud-based platforms. He also shared his experience of using LM Studio to build desktop version of LLM for generating content.

Prof. Nandip Vaidya (Associate Professor, ASMSoC, Mumbai gave a detailed presentation on how he used generative AI tools to create quizzes for his business analytics course. He explained the process of generating questions based on a given prompt and using the tools to create multiple sets of quizzes. He also demonstrated how he used generative AI to generate summaries of newspaper articles and encourage critical thinking among students.



The figure shows the prompt use for generating questions based on the dataset file shared with ChatGPT.

Dr. Praveen Kumar Loharkar (Asst. Professor, MPSTME, Shirpur Campus) provided an overview of the upcoming Faculty Development Program (FDP) on generative AI. He explained that the FDP would be conducted in two phases, with selected faculty members from each campus attending inperson training sessions in the first phase followed by campus-wise trainings and workshops in the second phase.

Dr. Praveen also requested the self-nominations of faculty members volunteering as resource persons for the FDP and encouraged them to contribute to the newsletter initiative on generative AI. He further demonstrated the process of joining the GenAI NMIMS community on Viva Engage



The meeting included a lively Q&A session among faculty members.

Learner Session with Dr. Barbara Oakley @ MPSTME, Mumbai

Topic: Using Generative AI to strengthen and speed learning

Day, Date and Time: Wednesday, August 21, 2024 @ 10:00 A.M.

MPSTME, NMIMS Mumbai Campus hosted Dr. Barbara Oakley, renowned author of "Learning How to Learn," for an insightful session on Generative AI (GenAI) in education. Introduced by Pro Vice Chancellor Dr. Sharad Mhaiskar, Dr. Oakley engaged faculty from various SVKM institutions, including MPSTME, DJSCOE, and SBMP.

Over 1.5 hours, she discussed GenAl's potential to personalize learning, address individual needs, and accelerate knowledge acquisition. Dr. Oakley also shared cognitive strategies for effective learning and practical Al applications to boost student engagement. The session included dynamic discussions, providing valuable insights into Al integration in education.



GenAl Initiatives and Past Activities at Navi Mumbai Campus

Topic: Student Spotlight: Kunal Shenoy's Article on LLMs

Kunal Shenoy, a 4th-year BTech (CSBS) student, recently made an academic contribution to the AI discourse by publishing an article on Medium titled "Mastering Language Models: Unleashing LLMs for NLP Excellence." Kunal's article delves into the evolution of Large Language Models (LLMs) like GPT-3 and GPT-4, their applications in natural language processing, and the ethical considerations they raise. He also provides a practical guide for building LLMs and explores the future potential of these models in shaping human-AI interactions.

Link:

https://medium.com/@shenoykunal1309/mastering-languagemodels-unleashing-llms-for-nlp-excellence-9a5646bc101a

NMIMS EduGenAI

Topic: STME E-Cell's Success with GenAI at India Sustainability Startathon 2024



The E-Cell at STME, NMIMS Navi Mumbai demonstrated the practical application of GenAl tools during the India Sustainability Startathon 2024 on "Design Thinking and Innovation" conducted from August 10-11, 2024. The event was organized in collaboration with The Future Founders Co. and OSG Youth Alliance. This event serves as the country-level selection for the ASEAN-China-India Youth Leadership Summit 2024 in Singapore.

The two-day Startathon aligned with the United Nations

Sustainable Development Goals (UNSDGs), promoting sustainable development through youth-driven innovation. The participating teams also explored the applications of GenAl and other Al tools for technology solutions to contribute towards SDGs. Around, 12 -15 teams participated in the Startathon. Ms. Supriya Panchanga, social entrepreneur (Founder, Future Founders), start-up mentor and author of the book," Accelerating Her Business" was the resource person for the Startathon.

Topic: Brushes and Bytes: Blending Creativity with AI

The Student Council of the School of Mathematics, Applied Statistics, and Analytics, in collaboration with the Arts Committee, organized the "Brushes and Bytes" competition last year on September 25. This event encouraged students to explore the intersection of technology and art by using AI platforms to generate unique artworks. Participants showcased diverse styles and ideas, pushing the boundaries of traditional creativity. The event not only highlighted the potential of AI in art creation but also provided students with hands-on experience with emerging AI technologies.



Topic: STME Infinix Club Seminar: Exploring the Future of Generative AI

The Infinix Club of School of Technology Management & Engineering (STME) hosted an insightful seminar featuring Mr. Bhavesh Rathore, Al Brand technical specialist, IBM as the guest speaker on February 10, 2024. The seminar focused on the relevance of Generative AI, job opportunities in the field, and IBM's Watson X. Mr. Rathore discussed the emergence of GenAI and addressed its ethical implications, exploring the "good, bad, and ugly" sides of this powerful technology. The session provided students with valuable knowledge about the evolving landscape of AI and inspired them to consider careers in this dynamic field.



GenAI Tools Use-Cases

Data Analysis using ChatGPT

Following are the steps to use ChatGPT for data analysis:

Step 1: Prepare Your Data 💡

- Ensure data is clean and well-structured.
- Remove missing or irrelevant data points.
- Save data in CSV, Excel, or JSON format.

Step 2: Upload Your Data 🙇

Use ChatGPT's file upload feature to upload dataset.

Step 3: Initial Exploration

- Ask ChatGPT for dataset overview.
- Prompt: "Summarize this dataset."

Step 4: Data Cleaning 🗸

- Request ChatGPT to identify/handle missing values/outliers.
- Prompt: "Handle missing values in dataset."

Step 5: Descriptive Statistics

- Get mean, median, mode, standard deviation.
- Prompt: "Provide descriptive stats for each column."

Step 6: Data Visualization

- Ask ChatGPT for histograms, scatter plots, bar charts.
- Prompt: "Generate histogram for 'age' column."

Step 7: Exploratory Data Analysis (EDA) 🔑

- Uncover patterns/relationships.
- Prompt: "Perform exploratory data analysis."

Step 8: Advanced Analysis

- Conduct regression, clustering, classification.
- **Prompt:** "Perform linear regression with 'sales' as dependent variable."

Step 9: Interpret Results

- Ask ChatGPT to interpret analysis results.
- Prompt: "Interpret linear regression results."

Step 10: Generate Insights 🗸

- Summarize key insights/actionable recommendations.
- **Prompt:** "Summarize key insights from data analysis."

Note: We can also get the **Python Codes** for getting answers to each of these steps to cross-verify the responses of ChatGPT.

Converting a YouTube Video to a Presentation

Steps to convert a YouTube Video to a Presentation:

Step 1: Install Google Chrome 间

• Ensure you have **Google Chrome browser** installed on your computer. If not, download and **install from Google Chrome website**.

Step 2: Open Chrome Web Store 🧊

• Launch Chrome browser and **go to Chrome Web Store** (<u>chrome.google.com/webstore</u>.).

Step 3: Search for Brisk Teaching 🔍

• Type "**Brisk Teaching**" in Chrome Web Store search bar and press Enter.

Step 4: Add to Chrome 🛨

• Find Brisk Teaching extension, click "Add to Chrome" and confirm in pop-up window.

Step 5: Confirm Installation 🗹

• Read permissions, **agree**, **and click** "Add **extension**" to start downloading and installing.

Step 6: Access the Extension 🔒

 After installation, find Brisk Teaching icon in top right corner of Chrome browser and pin for easy access.

Step 7: Sign In/Create an Account 🌌

• **Click Brisk Teaching** icon, sign in with existing account or create new one.

Step 8: Open YouTube 📹

• Launch Chrome browser and go to YouTube website.

Step 9: Select the YouTube Video 📽

- Go to desired YouTube video for presentation.

 Step 10: Click Brisk Icon
- **Click** Brisk icon in **bottom corner of screen**.

Step 11: Create Presentation Slides

- Select "Create" and then "Presentation".
- Step 12: Personalize Presentation 🥩
- Customize presentation by choosing grade level, number of slides, language, and images.

Step 13: Generate Presentation

- Click "BRISK IT!" button to generate presentation. Step 14: Edit and Customize
- Edit and customize generated presentation further in Google Slides.

Note: This works with those YouTube videos which have subtitles/captions.

Latest Updates and Trends

- OpenAl has introduced a new series of reasoning models called OpenAl o1. These models are designed to spend more time thinking before responding, allowing them to solve complex tasks in science, coding, and math more effectively. The first model in this series is now available in ChatGPT. Read more at Introducing OpenAI o1 | OpenAI.
- Deloitte's Q3 report on the state of generative AI in enterprises reveals that while investment in generative AI is increasing, organizations face challenges in scaling and creating value. Key areas of focus include data foundations, governance, risk, and compliance, which are essential for successful AI integration. Read more at <u>us-state-of-gen-ai-q3.pdf (deloitte.com)</u>.
- Great Learning's 'Workforce Skills Evolution Report 2024-25' highlights key trends in workforce training. It shows a significant focus on Generative AI across sectors and an increase in L&D budgets. The report reveals that organisations are broadening AI training beyond technical roles to include operations, customer service, and HR to boost efficiency and innovation. Read more at <u>The Future of Workforce Training: Generative AI and Beyond | Education (devdiscourse.com)</u>.
- As the field of Generative AI evolves, so too must the skills of AI engineers. The consensus among
 industry leaders is clear: Versatility is key. "Master the fundamentals of statistics and traditional AI,
 while also exploring the creative potential of generative AI," advises Sowmya T K, data scientist at
 Siemens Healthineers. Read more at Great solutions require integration of traditional AI and
 generative AI (msn.com)

Reference Links

- Basics of Prompting | Prompt Engineering Guide (promptingguide.ai)
- Best practices for prompt engineering with the OpenAI API | OpenAI Help Center
- <u>A New Paradigm Gen AI in Engineering R&D (dqindia.com)</u>

Stay updated on our journey into Generative AI at NMIMS University! We're just getting started!

With warm regards, EduGenAl Newsletter Team



Kindly send your feedback and contributions on GenAl use-cases to your respective school or campus representatives in the newsletter team or genai.newsletter@nmims.edu before the 25th of every month!