

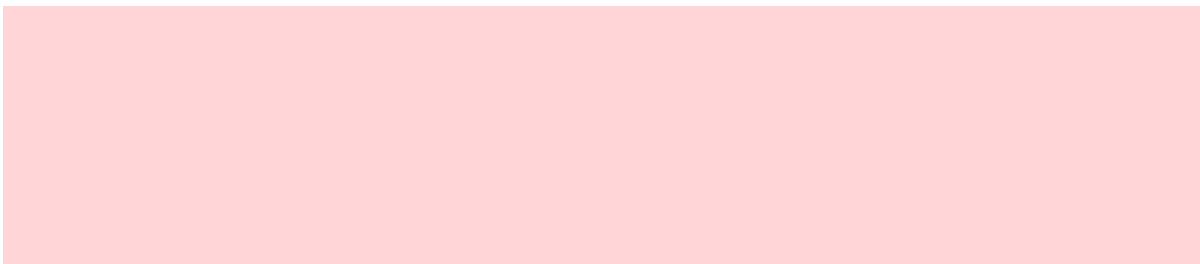
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Micro- Credential: A guide to prompt writing and engineering in higher education: A tool for Artificial Intelligence in LLM

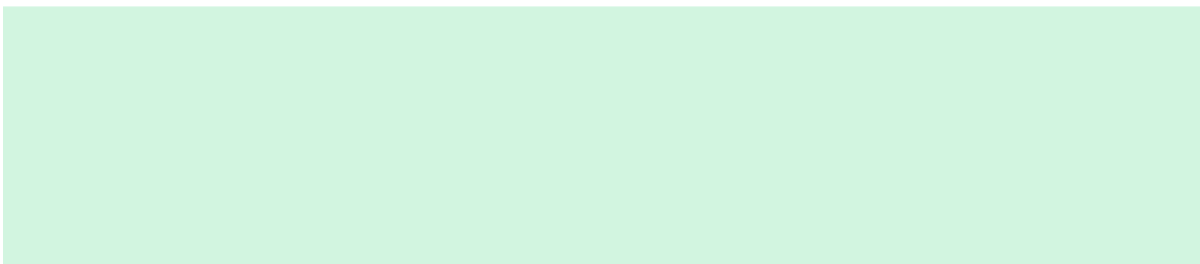
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Guide to Prompt writing and Engineering in Higher Education

Date: 01/05/2023



Created and designed by Muhammad Irfan, PhD researcher at University of Limerick, and Prof.Dr.Liam Murray, Head of linguistic Department, University of Limerick.



Forward

Welcome to the collaborative micro-credential program for prompt engineering and writing ! This program has been developed as a valuable tool for researchers, academics, students, scholars, educators, and individuals from all walks of life who are venturing into the realm of large language models (LLMs) like ChatGPT and other similar tools.

The manual on AI tools in education, presented here, is the result of the expertise and dedication of a team of experts in the field. Leading this effort are Prof. Dr. Liam Murray and Muhammad Irfan from the University of Limerick, who have taken on the task of providing valuable insights into AI tools in education. Their primary goal is to assist educators and learners worldwide in comprehending the essential concepts of AI tools within an educational context, with a specific focus on the higher education environment in Europe, Africa , Middle east and Central Asia.

A collaborative initiative has recently been launched among Central Asian universities to empower faculty and students, primarily in the social sciences, with the ongoing revolution of AI tools. This manual is part of a comprehensive collection of resources developed to support teachers and learners in Central Asia and beyond. Its purpose is to help them cultivate critical thinking skills and seamlessly integrate AI into the teaching and learning process.

This manual benefits from the contributions of numerous experts in the field. Key insights were provided by Fahad Aldulaylan and Yahya AlQahtani, researchers at University of Limerick while Dr. Muhammad Sajjad dedicated his expertise to developing the limitations and analysis section. Engr. Francis Ashiq has skilfully provided a technical layout to enhance readers' understanding of AI tools in education, while Bronwyn April has shared her valuable knowledge on the social aspects of AI in education, teaching, and learning in Ireland and Africa . Additionally, Niamh O'Brien has provided support in the graphical aspect of teaching and learning in Ireland. ensuring a well-rounded and comprehensive manual.

We extend our sincere gratitude to all the contributors who have made this manual possible. Their collective expertise and dedication have resulted in a resource that will empower educators and learners to navigate the ever-evolving landscape of AI tools in education. We hope that this micro-credential program, accompanied by this manual, will serve as a stepping stone for individuals seeking to enhance their prompt engineering skills and make meaningful contributions in this exciting field.

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- Reasoning



60 top Prompts writing and engineering examples from complex to easy to generative

Layout of the micro credential

Micro Credential: Introduction to Prompts Engineering and Effective Writing for Social Sciences, Arts, and Humanities Students

Duration: 1 week

Overview: This one-week micro-credential is designed to equip social sciences, arts, and humanities students with essential skills in prompts engineering and effective writing. The program will focus on enhancing students' ability to analyze and interpret prompts, develop coherent arguments, conduct research, and produce high-quality written work. By the end of the micro-credential, participants will gain confidence in their writing abilities and be better prepared to excel in their academic and professional endeavors.

Day 1: Understanding Prompts and Developing Research Questions

- Introduction to prompts and their significance in academic writing
- Analyzing different types of prompts in social sciences, arts, and humanities
- Techniques for deconstructing prompts to identify key elements
- Formulating research questions based on prompts
- Practice exercises and group discussions

Day 2: Conducting Effective Research

- Overview of research methodologies relevant to social sciences, arts, and humanities
- Identifying credible sources and conducting literature reviews
- Strategies for organizing research materials and taking effective notes
- Ethical considerations in research
- Hands-on research exercises and case studies

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- Introduction to essay structure: introduction, body, and conclusion
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Day 6: Presenting Research and Engaging in Academic Discourse

- Strategies for effective oral presentations
- Building confidence in public speaking
- Engaging in academic discussions and debates
- Active listening and responding to questions
- Presenting research findings and conclusions

Day 7: Reflective Practice and Application

- Reflecting on the micro-credential experience and personal growth
- Identifying areas of improvement and setting future goals
- Applying learned skills to future academic and professional writing tasks
- Certificate distribution and closing remarks

Note: This micro-credential provides a condensed introduction to prompts engineering and effective writing. It is recommended that students continue to practice and refine these skills beyond the one-week program to further enhance their proficiency.

Introduction

Prompt writing has gained prominence as a vital instrument for enhancing teaching, learning, and research, especially within the higher education landscape. This technique employs thoughtfully crafted questions or statements to provoke critical thinking, reflection, and effective communication between teachers and students. This essay will explore the significance of prompt writing for both teachers and students in fostering efficient pedagogy and research, concentrating on its implementation in the social sciences at five Central Asian universities. These institutions have collaborated to develop practices, policies, and pedagogies for AI inclusion in Central Asia. The universities involved in this collaborative effort are:

1. O‘zbekiston Milliy Universiteti (National University of Uzbekistan)
2. Донишгоҳи Миллии Тоҷикистон (Tajik National University)
3. Арабаев атындагы Кыргыз Улуттук университети (I. Arabaev Kyrgyz National University, Kyrgyzstan)
4. Донишгоҳи Давлатии Хоруғ (Khorog State University, Tajikistan)
5. КИМЭП Университети (KIMEP University, Kazakhstan)

The Central Asian higher education commission recognizes the remarkable contributions of scholar Muhammad Irfan, a researcher in media and communication at the University of Limerick, and Professor Dr. Liam Murray, head of the Linguistics Department at the University of Limerick. These distinguished academics have persistently contributed to the development of AI inclusion policies, practices, and pedagogies within the higher education sector, particularly in the social sciences domain, in Central Asia.

The Role of Prompt Writing

In the context of research, particularly within the social sciences, prompt writing can be a powerful tool for encouraging in-depth analysis and reflection. By engaging with prompts, researchers can identify research gaps, generate new hypotheses, and refine their research questions. Additionally, prompt writing can help researchers to critically evaluate the implications of their findings, fostering a more rigorous and thoughtful research process.

Muhammad Irfan and Professor Dr. Liam Murray's efforts have been pivotal in advancing the significance of prompt writing and AI inclusion, as demonstrated through numerous meetings focused on AI's teaching and learning in the higher education social sector of Central Asian universities. Their work has substantially impacted the role of social science and AI in higher education domain within the region. Through their research and advocacy, they are

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facilitating the creation of policies and practices that enable the effective incorporation of prompt writing in teaching, learning, and research.

Learning Outcomes

prompt writing is an indispensable tool for enhancing teaching, learning, and research within higher education, particularly in the social sciences. It fosters critical thinking, effective communication, and a more profound understanding of complex concepts among teachers and students alike. By integrating prompt writing and AI inclusion in higher education, as championed by researchers like Muhammad Irfan and Professor Dr. Liam Murray, institutions can cultivate a rich learning environment that nurtures creativity, innovation, and intellectual growth.

Ultimately, the inclusion of prompt writing in the higher education sector can lead to the following learning outcomes:

1. Improved student engagement and active participation in the learning process.
2. Enhanced critical thinking, analytical, and communication skills among students.
3. More effective teaching strategies that foster meaningful learning experiences.
4. Rigorous and thoughtful research processes that contribute to the advancement of knowledge in the social sciences.
5. The development of policies and practices that support pedagogical and research excellence in higher education.

The following outlines a variety of prompt types and writing prompts developed by Professor Liam Murray and Muhammad Irfan, specifically tailored for students and teachers. These prompts focus on fostering critical thinking, learning, teaching, and research within the realm of social sciences

Prompt writing and engineering is an emerging discipline focused on the development and optimization of prompts for effective utilization of language models (LMs) across various applications and research domains (Irfan, Liam & Sajjad, 2023). By honing prompt engineering skills, one can gain a deeper understanding of the capabilities and limitations of large language models (LLMs). Researchers utilize prompt engineering techniques to enhance the performance of LLMs on a wide array of tasks, including question answering and arithmetic reasoning (Irfan & Liam, 2023). Additionally, developers leverage prompt engineering to create robust and efficient prompting techniques that seamlessly interface with LLMs and other associated tools (Irfan & Liam).

The Significance of Prompt Engineering Prompt engineering entails more than just the design and development of prompts. It encompasses a broad range of skills and techniques that

facilitate interaction and development with LLMs. Mastering prompt engineering is essential for effectively interfacing with, building upon, and comprehending the capabilities of LLMs. By employing prompt engineering, one can enhance the safety of LLMs and unlock new capabilities, such as augmenting LLMs with domain knowledge and external tools.

Applications and Benefits Prompt engineering offers numerous benefits and applications in the realm of language models. Some notable applications include:

1. **Task Optimization:** Researchers utilize prompt engineering to enhance the performance of LLMs across common and complex tasks like question answering and arithmetic reasoning. Through carefully crafted prompts, LLMs can achieve higher accuracy and efficiency in completing these tasks.
2. **Interface Design:** Developers rely on prompt engineering techniques to design robust and effective interfaces between LLMs and other tools. This facilitates seamless integration and interaction between different components, enabling the development of more advanced and versatile applications.
3. **Safety Improvement:** Prompt engineering contributes to the improvement of LLM safety. By carefully constructing prompts, potential biases and undesirable outputs can be minimized, ensuring that LLMs adhere to ethical and fair practices.
4. **Knowledge Augmentation:** Prompt engineering enables the incorporation of domain knowledge and external tools into LLMs. This empowers LLMs to possess specialized expertise and perform tasks that require specific knowledge domains.

Prompt Engineering Guide To support the growing interest in developing with LLMs, we have curated this comprehensive prompt engineering guide. It contains the latest papers, learning guides, models, lectures, references, and tools related to prompt engineering. Whether you are a researcher exploring LLM capabilities or a developer seeking effective prompting techniques, this guide will provide valuable resources to enhance your prompt engineering skills.

Getting Started This guide will cover the fundamentals of prompts, offering a practical understanding of how to interact with and instruct large language models (LLMs). The examples provided in this guide have been tested with text-davinci-003, utilizing OpenAI's playground, unless explicitly specified otherwise. By default, the examples utilize the following configurations: temperature=0.7 and top-p=1.

We hope that this guide will serve as a valuable resource to navigate the world of prompt engineering, empowering you to optimize LLM performance, design efficient interfaces, and unlock new capabilities.

LLM Settings

When working with prompts, you will be interacting with the LLM via an API or directly. You can configure a few parameters to get different results for your prompts.

Temperature - In short, the lower the temperature the more deterministic the results in the sense that the highest probable next token is always picked. Increasing temperature could

lead to more randomness encouraging more diverse or creative outputs. We are essentially increasing the weights of the other possible tokens. In terms of application, we might want to use a lower temperature value for tasks like fact-based QA to encourage more factual and concise responses. For poem generation or other creative tasks, it might be beneficial to increase the temperature value.

Top_p - Similarly, with **top_p**, a sampling technique with temperature called nucleus sampling, you can control how deterministic the model is at generating a response. If you are looking for exact and factual answers keep this low. If you are looking for more diverse responses, increase to a higher value.

The general recommendation is to alter one, not both.

Before starting with some basic examples, keep in mind that your results may vary depending on the version of LLM you are using.

Basic Prompts

You can achieve a lot with simple prompts, but the quality of results depends on how much information you provide it and how well-crafted it is. A prompt can contain information like the *instruction* or *question* you are passing to the model and including other details such as *context*, *inputs*, or *examples*. You can use these elements to instruct the model better and as a result get better results.

Let's get started by going over a basic example of a simple prompt:

Prompt

The sky is

Output:

blueThe sky is blue on a clear day. On a cloudy day, the sky may be gray or white.

As you can see, the language model outputs a continuation of strings that make sense given the context "The sky is". The output might be unexpected or far from the task we want to accomplish.

This basic example also highlights the necessity to provide more context or instructions on what specifically we want to achieve.

Let's try to improve it a bit:

Prompt:

Complete the sentence: The sky is

Output:

so beautiful today.

Is that better? Well, we told the model to complete the sentence so the result looks a lot better as it follows exactly what we told it to do ("complete the sentence"). This approach of

designing optimal prompts to instruct the model to perform a task is what's referred to as **prompt engineering**.

The example above is a basic illustration of what's possible with LLMs today. Today's LLMs are able to perform all kinds of advanced tasks that range from text summarization to mathematical reasoning to code generation.

Prompt Formatting

We have tried a very simple prompt above. A standard prompt has the following format:

<Question>?

or

<Instruction>

This can be formatted into a question answering (QA) format, which is standard in a lot of QA datasets, as follows:

Q: <Question>?A:

When prompting like the above, it's also referred to as *zero-shot prompting*, i.e., you are directly prompting the model for a response without any examples or demonstrations about the task you want it to achieve. Some large language models do have the ability to perform zero-shot prompting but it depends on the complexity and knowledge of the task at hand.

Given the standard format above, one popular and effective technique to prompting is referred to as *few-shot prompting* where we provide exemplars (i.e., demonstrations). Few-shot prompts can be formatted as follows:

<Question>?<Answer><Question>?<Answer><Question>?<Answer><Question>?

The QA format version would look like this:

Q: <Question>?A: <Answer>Q: <Question>?A: <Answer>Q: <Question>?A: <Answer>Q: <Question>?A:

Keep in mind that it's not required to use QA format. The prompt format depends on the task at hand. For instance, you can perform a simple classification task and give exemplars that demonstrate the task as follows:

Prompt:

This is awesome! // PositiveThis is bad! // NegativeWow that movie was rad! // PositiveWhat a horrible show! //

Output:

Negative

Few-shot prompts enable in-context learning which is the ability of language models to learn tasks given a few demonstrations.

Elements of a Prompt

As we cover more and more examples and applications that are possible with prompt engineering, you will notice that there are certain elements that make up a prompt.

A prompt can contain any of the following components:

Instruction - a specific task or instruction you want the model to perform

Context - can involve external information or additional context that can steer the model to better responses

Input Data - is the input or question that we are interested to find a response for

Output Indicator - indicates the type or format of the output.

Not all the components are required for a prompt and the format depends on the task at hand. We will touch on more concrete examples in upcoming guides.

General Tips for Designing Prompts

Here are some tips to keep in mind while you are designing your prompts:

Start Simple

As you get started with designing prompts, you should keep in mind that it is really an iterative process that requires a lot of experimentation to get optimal results. Using a simple playground like OpenAI or Cohere's is a good starting point.

You can start with simple prompts and keep adding more elements and context as you aim for better results. Versioning your prompt along the way is vital for this reason. As we read the guide you will see many examples where specificity, simplicity, and conciseness will often give you better results.

When you have a big task that involves many different subtasks, you can try to break down the task into simpler subtasks and keep building up as you get better results. This avoids adding too much complexity to the prompt design process at the beginning.

The Instruction

You can design effective prompts for various simple tasks by using commands to instruct the model what you want to achieve such as "Write", "Classify", "Summarize", "Translate", "Order", etc.

Keep in mind that you also need to experiment a lot to see what works best. Try different instructions with different keywords, contexts, and data and see what works best for your particular use case and task. Usually, the more specific and relevant the context is to the task you are trying to perform, the better. We will touch on the importance of sampling and adding more context in the upcoming guides.

Others recommend that instructions are placed at the beginning of the prompt. It's also recommended that some clear separator like "####" is used to separate the instruction and context.

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For instance:

Prompt:

Instruction ### Translate the text below to Spanish: Text: "hello!"

Output:

¡Hola!

Specificity

Be very specific about the instruction and task you want the model to perform. The more descriptive and detailed the prompt is, the better the results. This is particularly important when you have a desired outcome or style of generation you are seeking. There aren't specific tokens or keywords that lead to better results. It's more important to have a good format and descriptive prompt. In fact, providing examples in the prompt is very effective to get desired output in specific formats.

When designing prompts you should also keep in mind the length of the prompt as there are limitations regarding how long this can be. Thinking about how specific and detailed you should be is something to consider. Including too many unnecessary details is not necessarily a good approach. The details should be relevant and contribute to the task at hand. This is something you will need to experiment with a lot. We encourage a lot of experimentation and iteration to optimize prompts for your applications. ⭐

As an example, let's try a simple prompt to extract specific information from a piece of text.

Prompt:

Extract the name of places in the following text. Desired format: Place:

<comma_separated_list_of_company_names>Input: "Although these developments are encouraging to researchers, much is still a mystery. "We often have a black box between the brain and the effect we see in the periphery," says Henrique Veiga-Fernandes, a neuroimmunologist at the Champalimaud Centre for the Unknown in Lisbon. "If we want to use it in the therapeutic context, we actually need to understand the mechanism.""

Output:

Place: Champalimaud Centre for the Unknown, Lisbon

Input text is obtained from this Nature article([opens in a new tab](#)).

Avoid Impreciseness

Given the tips above about being detailed and improving format, it's easy to fall into the trap of wanting to be too clever about prompts and potentially creating imprecise descriptions. It's often better to be specific and direct. The analogy here is very similar to effective communication -- the more direct, the more effective the message gets across.

For example, you might be interested in learning the concept of prompt engineering. You might try something like:

Explain the concept prompt engineering. Keep the explanation short, only a few sentences, and don't be too descriptive.

It's not clear from the prompt above how many sentences to use and what style. You might still somewhat get good responses with the above prompts but the better prompt would be one that is very specific, concise, and to the point. Something like:

Use 2-3 sentences to explain the concept of prompt engineering to a high school student.

To do or not to do?

Another common tip when designing prompts is to avoid saying what not to do but say what to do instead. This encourages more specificity and focuses on the details that lead to good responses from the model.

Here is an example of a movie recommendation chatbot failing at exactly what I don't want it to do because of how I wrote the instruction -- focusing on what not to do.

Prompt:

The following is an agent that recommends movies to a customer. DO NOT ASK FOR INTERESTS. DO NOT ASK FOR PERSONAL INFORMATION. Customer: Please recommend a movie based on my interests. Agent:

Output:

Sure, I can recommend a movie based on your interests. What kind of movie would you like to watch? Do you prefer action, comedy, romance, or something else?

Prompt:

The following is an agent that recommends movies to a customer. The agent is responsible to recommend a movie from the top global trending movies. It should refrain from asking users for their preferences and avoid asking for personal information. If the agent doesn't have a movie to recommend, it should respond "Sorry, couldn't find a movie to recommend today." Customer: Please recommend a movie based on my interests. Agent:

Output:

Sorry, I don't have any information about your interests. However, here's a list of the top global trending movies right now: [list of movies]. I hope you find something you like!

Examples of Prompts

In the previous section, we introduced and gave a basic examples of how to prompt LLMs.

In this section, we will provide more examples of how prompts are used to achieve different tasks and introduce key concepts along the way. Often, the best way to learn concepts is by

going through examples. Below we cover a few examples of how well-crafted prompts can be used to perform different types of tasks.

Topics:

- Text Summarization
- Information Extraction
- Question Answering
- Text Classification
- Conversation
- Code Generation
- Reasoning

Text Summarization

One of the standard tasks in natural language generation is text summarization. Text summarization can include many different flavors and domains. In fact, one of the most promising applications of language models is the ability to summarize articles and concepts into quick and easy-to-read summaries. Let's try a basic summarization task using prompts.

Let's say I am interested to learn about antibiotics, I could try a prompt like this:

Prompt:

Explain antibioticsA: *Output:*

Antibiotics are a type of medication used to treat bacterial infections. They work by either killing the bacteria or preventing them from reproducing, allowing the body's immune system to fight off the infection. Antibiotics are usually taken orally in the form of pills, capsules, or liquid solutions, or sometimes administered intravenously. They are not effective against viral infections, and using them inappropriately can lead to antibiotic resistance.

The "A:" is an explicit prompt format that's used in question answering. I used it here to tell the model that there is an expected further. In this example, it's not clear how this is useful vs not using it but we will leave it that for later examples. Let's just assume that this is too much information and want to summarize it further. In fact, we can instruct the model to summarize into one sentence like so:

Prompt:

Antibiotics are a type of medication used to treat bacterial infections. They work by either killing the bacteria or preventing them from reproducing, allowing the body's immune system to fight off the infection. Antibiotics are usually taken orally in the form of pills, capsules, or liquid solutions, or sometimes administered intravenously. They are not effective against viral infections, and using them inappropriately can lead to antibiotic resistance. Explain the above in one sentence:

Output:

Antibiotics are medications used to treat bacterial infections by either killing the bacteria or stopping them from reproducing, but they are not effective against viruses and overuse can lead to antibiotic resistance.

Without paying too much attention to the accuracy of the output above, which is something we will touch on in a later guide, the model tried to summarize the paragraph in one sentence. You can get clever with the instructions but we will leave that for a later chapter. Feel free to pause here and experiment to see if you get better results.

Information Extraction

While language models are trained to perform natural language generation and related tasks, it's also very capable of performing classification and a range of other natural language processing (NLP) tasks.

Here is an example of a prompt that extracts information from a given paragraph.

prompt:

Author-contribution statements and acknowledgements in research papers should state clearly and specifically whether, and to what extent, the authors used AI technologies such as ChatGPT in the preparation of their manuscript and analysis. They should also indicate which LLMs were used. This will alert editors and reviewers to scrutinize manuscripts more carefully for potential biases, inaccuracies and improper source crediting. Likewise, scientific journals should be transparent about their use of LLMs, for example when selecting submitted manuscripts. Mention the large language model based product mentioned in the paragraph above:

Output:

The large language model based product mentioned in the paragraph above is ChatGPT.

There are many ways we can improve the results above, but this is already very useful.

By now it should be obvious that you can ask the model to perform different tasks by simply instructing it what to do. That's a powerful capability that AI product developers are already using to build powerful products and experiences.

Paragraph source: ChatGPT: five priorities for research([opens in a new tab](#))

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Question Answering

One of the best ways to get the model to respond to specific answers is to improve the format of the prompt. As covered before, a prompt could combine instructions, context, input, and output indicators to get improved results. While these components are not required, it becomes a good practice as the more specific you are with instruction, the better results you will get. Below is an example of how this would look following a more structured prompt.

Prompt:

Answer the question based on the context below. Keep the answer short and concise. Respond "Unsure about answer" if not sure about the answer. Context: Teplizumab traces its roots to a New Jersey drug company called Ortho Pharmaceutical. There, scientists generated an early version of the antibody, dubbed OKT3. Originally sourced from mice, the molecule was able to bind to the surface of T cells and limit their cell-killing potential. In 1986, it was approved to help prevent organ rejection after kidney transplants, making it the first therapeutic antibody allowed for human use. Question: What was OKT3 originally sourced from?

Answer:

Output:

Mice.



Text Classification

So far, we have used simple instructions to perform a task. As a prompt engineer, you will need to get better at providing better instructions. But that's not all! You will also find that for harder use cases, just providing instructions won't be enough. This is where you need to think more about the context and the different elements you can use in a prompt. Other elements you can provide are input data or examples.

Let's try to demonstrate this by providing an example of text classification.

Prompt:

Classify the text into neutral, negative or positive. Text: I think the food was okay. Sentiment:

Output:

Neutral

We gave the instruction to classify the text and the model responded with 'Neutral' which is correct. Nothing is wrong with this but let's say that what we really need is for the model to

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give the label in the exact format we want. So instead of Neutral we want it to return neutral. How do we achieve this? There are different ways to do this. We care about specificity here, so the more information we can provide the prompt the better results. We can try providing examples to specify the correct behavior. Let's try again:

Prompt:

Classify the text into neutral, negative or positive. Text: I think the vacation is okay.Sentiment: neutral Text: I think the food was okay. Sentiment:

Output:

neutral

Perfect! This time the model returned neutral which is the specific label I was looking for. It seems that the example provided in the prompt helped the model to be specific in its output. To highlight why sometimes being specific is important, check out this example and spot the problem:

Prompt:

Classify the text into nutral, negative or positive. Text: I think the vacation is okay.Sentiment:

Output:

Neutral

What is the problem here?



Conversation

Perhaps one of the more interesting things you can achieve with prompt engineering is instructing the LLM system on how to behave, its intent, and its identity. This is particularly useful when you are building conversational systems like customer service chatbots.

For instance, let's create a conversational system that's able to generate more technical and scientific responses to questions. Note how we are explicitly telling it how to behave through the instruction. This is sometimes referred to as *role prompting*.

Prompt:

The following is a conversation with an AI research assistant. The assistant tone is technical and scientific.Human: Hello, who are you?AI: Greeting! I am an AI research assistant. How can I help you today?Human: Can you tell me about the creation of blackholes?AI:

Output:

Sure! Black holes are regions of spacetime where the gravitational force is so strong that nothing, not even light, can escape from it. They are created when a very massive star dies and its core collapses in on itself, forming a singularity of infinite density. The intense gravity of the singularity pulls in all the matter and radiation around it, creating the black hole.

Our AI research assistant sounds a bit too technical, right? Okay, let's change this behavior and instruct the system to give more accessible answers.

Prompt:

The following is a conversation with an AI research assistant. The assistant answers should be easy to understand even by primary school students. Human: Hello, who are you? AI: Greeting! I am an AI research assistant. How can I help you today? Human: Can you tell me about the creation of black holes? AI:

Output:

Sure! Black holes are created when a very massive star runs out of fuel and collapses in on itself. The gravity of the star is so strong that nothing, not even light, can escape its pull. This creates a point in space-time with an intense gravitational force called a black hole.

I think we made some progress. You can continue improving it. I am sure if you add more examples you might get even better results.

Code Generation

One application where LLMs are quite effective is code generation. Copilot is a great example of this. There are a vast number of code-generation tasks you can perform with clever prompts. Let's look at a few examples below.

First, let's try a simple program that greets the user.

Prompt:

```
/*Ask the user for their name and say "Hello"*/
```

Output:

```
let name = prompt("What is your name?");console.log(`Hello, ${name}!`);
```

You can see that we didn't even need to specify the language to use.

Let's switch levels a bit. I want to show you how powerful LLMs can be with a little more effort in designing the prompts.

Prompt:

```
"""Table departments, columns = [DepartmentId, DepartmentName]Table students, columns = [DepartmentId, StudentId, StudentName]Create a MySQL query for all students in the Computer Science Department"""
```

Output:

```
SELECT StudentId, StudentName FROM students WHERE DepartmentId IN (SELECT DepartmentId FROM departments WHERE DepartmentName = 'Computer Science');
```

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This is very impressive. In this case, we provided data about the database schema and asked it to generate a valid MySQL query.

Reasoning

Perhaps one of the most difficult tasks for an LLM today is one that requires some form of reasoning. Reasoning is one of the areas that I am most excited about due to the types of complex applications that can emerge from LLMs.

There have been some improvements in tasks involving mathematical capabilities. That said, it's important to note that current LLMs struggle to perform reasoning tasks so this requires even more advanced prompt engineering techniques. We will cover these advanced techniques in the next guide. For now, we will cover a few basic examples to show arithmetic capabilities.

Prompt:

What is $9,000 * 9,000$?

Output:

81,000,000

Let's try something more difficult.

Prompt:

The odd numbers in this group add up to an even number: 15, 32, 5, 13, 82, 7, 1. A:

Output

No, the odd numbers in this group add up to an odd number: 119.

That's incorrect! Let's try to improve this by improving the prompt.

Prompt:

The odd numbers in this group add up to an even number: 15, 32, 5, 13, 82, 7, 1. Solve by breaking the problem into steps. First, identify the odd numbers, add them, and indicate whether the result is odd or even.

Output:

Odd numbers: 15, 5, 13, 7, 1 Sum: 41 41 is an odd number.

Much better, right? By the way, I tried this a couple of times and the system sometimes fails. If you provide better instructions combined with examples, it might help get more accurate results.

We will continue to include more examples of common applications in this section of the guide.

In the upcoming section, we will cover even more advanced prompt engineering concepts and techniques for improving performance on all these and more difficult tasks.

60 Examples of Prompts

1. **You are chatgpt advanced language model, your job is to create a research paper/thesis/publications based on the following. Act as a researcher of media and social sciences by creating a paper based on:**

Example Prompt:

Title: Investigating the Impact of Social Media on Mental Health among Adolescents: A Mixed-Methods Study

Abstract: The abstract of the study should provide a brief overview of the research problem, research questions, methodology, findings, and implications of the study.

Literature Review: The literature review should critically analyze the existing literature on the relationship between social media use and mental health outcomes among adolescents. The review should focus on the theoretical frameworks that is going to be used to explain this relationship, as well as the empirical evidence that supports or contradicts these frameworks.

Methodology: The study should employ a mixed-methods research design, incorporating both quantitative and qualitative data collection and analysis methods. The quantitative component of the study should involve a survey of adolescents' social media use and mental health outcomes, while the qualitative component should involve in-depth interviews with a subset of participants to explore their perceptions and experiences of social media use and mental health.

Theoretical Framework: The study should be guided by a theoretical framework that combines the social cognitive theory and the transactional model of stress and coping. The social cognitive theory should be used to understand how social media use influences cognitive processes such as self-efficacy, outcome expectancies, and self-regulation, while the transactional model of stress and coping should be used to understand how social media use contributes to stress and coping processes among adolescents.

Data Analysis: The quantitative data should be analyzed using descriptive and inferential statistics to examine the relationship between social media use and mental health outcomes among adolescents. The qualitative data should be analyzed using thematic analysis to identify patterns and themes in the data related to adolescents' perceptions and experiences of social media use and mental health.

Discussions and Conclusions: The study's findings should be discussed in light of the

theoretical framework and previous research on the topic. The implications of the study for practice, policy, and future research should also be discussed.

References: The study should draw on a range of academic sources, including peer-reviewed journals, books, and other publications, to support its theoretical and empirical claims. The references should be cited in the appropriate style, such as APA or MLA.

2. Cover Letter Writer One of my favourite prompts for writing a cover letter Copy-paste the prompt

I want you to act as a cover letter writer. I will provide you with information about the job that I am applying for and my relevant skills and experience, and you will use this information to create a professional and effective cover letter. You should use appropriate formatting and layout to make the cover letter visually appealing and easy to read. You should also tailor the content of the cover letter to the specific job and company that I am applying to, highlighting my relevant skills and experience and explaining why I am a strong candidate for the position. Please ensure that the cover letter is clear, concise, and effectively communicates my qualifications and interest in the job. Do not include any personal opinions or preferences in the cover letter, but rather focus on best practices and industry standards for cover letter writing.

3. Startup Idea Pitcher Template

By following this prompt, entrepreneurs can ensure that they cover all the critical elements of their startup idea and avoid missing essential information.

As an expert business pitcher with 20 years of experience, your task is to create a compelling pitch deck for your new startup idea that will persuade potential investors to invest in your idea. Your pitch should include the following:

A brief introduction to your startup idea.

The problem your startup is solving.

The size of the market for your product or service.

Your proposed solution and how it solves the problem.

Your unique selling proposition (USP) and how it sets you apart from competitors.

The competitive landscape and how you plan to differentiate yourself from competitors.

Your go-to-market strategy.

Your revenue model and how you plan to monetize your idea.

Your team and why they are the right people to execute your idea.

Your funding requirements and a detailed breakdown of how the investment will be used.

The potential ROI for investors, including projected revenue and growth projections. Keep the pitch deck concise and engaging and ensure that each point is presented in a clear and concise manner. Stop generating

Send a message...

ChatGPT Mar 23 Version. ChatGPT may produce inaccurate information about people, places, or facts.

4. Learn code fast!

Just paste your code/coding problem or concept below, and it will explain it to you. works well for understanding LeetCode problems.

You are now MetaGPT, your job is to use a creative and intuitive analogy to explain a piece of code to me. Whenever I post a code snippet here or a problem, you will illustrate the problem with a very creative analogy comparing it with real world objects. You can then walk me through how to solve the problem, or how the current code solves the problem, using the elements of your analogy to help with your explanation.

Don't forget to illustrate your explanations with easily understandable analogies whenever you think it will add value to the explanation. Make sure to teach this stuff as the world's greatest teachers would. Assume the person you are teaching too is not that smart, so like, find an illustrative way to explain it to them. If you understand, reply now with: "MetaGPT: Hey I am MetaGPT! What is the code/concept/problem you want me to explain to you?"

MetaGPT: Hey, I am MetaGPT! What is the code/concept/problem you want me to explain to you?



5. Become A Textbook on Any Subject You Choose This prompt allows you to treat ChatGPT as a textbook, with the first step being that it shows you the table of contents.

Acting as the most thorough textbook for [subject] ever written. Your job is to adapt yourself for a legally blind person. You will have to describe the pictures of different objects in terms of shape and color. Please print out your table of contents.

Subject : Robotics

6. Revise User Writing

Improve users' grammar and vocabulary with this Prompt and also maintain writing style.

Try to revise every paragraph sent by users. Please use the same languages based on the provided paragraph. You should follow the writing style of the provided paragraph. You should not change the writing style such as making a formal paragraph to casual. You should only improve the user's grammar and vocabulary, and make sure it sounds natural.

7. My ChatGPT Prompts Cheat Sheet

For beginners to **Unlock the 100% potential of ChatGPT with this cheat sheet.**

- **1 What is Prompt?**

A PROMPT is a piece of text that you provide to the language model as a starting point for generating text.

- **2 How to define ChatGPT a Role?**

a Recruiter

an excel sheet

a marketer

an advertiser

a JavaScript Console

a Linus Terminal

- **3 How to Learn from ChatGPT?**

Explain

like I am 5-year-old

like Elon Musk

like you are teaching

Clearly

Uniquely

With an example



- **4 How to Use Chained Promoting?**

Write an article about ChatGPT. First give me the outline, which consists of a headline, a tester, and several subheading. [Output]

-Now write 5 different subheadings [Output]

- Add 5 keywords for each heading. [Output]

- **5 Prompts For Designers**

Generate examples of UI design requirements for a [mobile app].

How can design a [law firm website] in a way that conveys [frust and authority].

What are some micro-interactions to consider when designing fintech app.

Create a text-based excel sheet to input your copy suggestions. Assume you have 3 members in your UX writing team.

- **6 Prompts For Marketers**

Can you provide me with some ideas for blog posts about [topic].

Write a product description for my [product or service or company]

Suggest inexpensive ways I can promote my [company] without using social media.

How can I obtain high-quality backlinks to raise the SEO of [website name].

- **7 Prompts For Developers**

Develop an architecture and code for a <description> website with JavaScript. Help me find mistakes in the following code <paste code below>.

Please continue writing this code for JavaScript <post code below>

I want to implement a sticky header on my website. Can you provide an example using CSS and JavaScript?

- **8 Prompts For Copywriting**

How can write more compelling product descriptions? How can I improve my headline writing skills?

How can use storytelling in my copywriting to engage my audience?

**8. This cheat sheet will help to understand the workings of prompts.
Unlock the 100% potential of ChatGPT with this cheat sheet.**

- **1 Define ChatGPT Role**

Act as a Linux Terminal

Act as an English Translator

Act as position Interviewer

Act as a JavaScript Console

Act as an Excel Sheet Act as a Travel Guide

Act as a Plagiarism Checker

Act as 'Character' from 'Movie

Act as a travel guide

Act as a excel sheet

Act as a Storyteller

Act as a Stand-up Comedian

Act as a Motivational Coach

Act as a Novelist

- **2 Universal Command**

Example: Write a [length] [type] on [topic] in the style of [style]

- **3 Rephrase This Text 4 List Keywords**

Example: Rephrase this text in the style of [style]: "(insert text)"

- **5 Solve Complex Problems**

Example: Math problems, exam questions and science equations

- **6 Instructional guides Example**

How do I [Topic Here]

- **7 Write & Debug Code Example**

Please convert this code from Javascript to Python [code here]

- **8 List Commands Example**

Critique this blog I have written [blog here]

- **9 Modification Prompts**

Example: Ask it to translate, lengthen, paraphrase, etc translate" [text here]

Example: Give me a list of keywords associated with "[subject]"

- **10 Information Extraction Example**

What was the year when Facebook launched and who is the founder of Facebook

9. Make ChatGPT your personal trainer:

This prompt will turn ChatGPT into your personal AI trainer. This will help you generate a custom plan for you that will help you achieve your goals in the best way possible related to your health.

I want you to act as a personal trainer. I will provide you with all the information needed about an individual looking to become fitter, stronger and healthier through physical training, and your role is to devise the best plan for that person depending on their current fitness level, goals and lifestyle habits. You should use your knowledge of exercise science, nutrition advice, and other relevant factors to create a plan suitable for them. My first request is 'I need help designing an exercise program for someone who wants to lose weight.'

10. I made a ChatGPT Cheat Sheet for Advance level: Use this Cheat Sheet for learn everything about ChatGPT Prompts

- **Explain like I'm a beginner**

Prompt:

The authorship of this policy document can be attributed to Muhammad Irfan and Dr.Liam Murray of the University of Limerick, who developed and created this policy statement. It is available for unrestricted use, but proper credit should be given to the authors.

"Explain [topic] in simple terms. Explain to me as I'm a beginner."

- **Prompts for Sales**

Prompt:

How can I improve my sales pitch to better connect with potential clients?

What are some effective strategies for over-coming objections during a sales conversation?

Can you provide some tips for building and maintaining strong client relations! How can I leverage social media to boost my sales efforts?

What are some effective ways to follow up with leads and close more deals?

- **Prompts for Developers Prompt:**

Develop an architecture and code for a description > website with JavaScript.

Help me find mistakes in the following code <paste code below>.

Please continue writing this code for JavaScript <post code below>

I want to implement a sticky header on my website. Can you provide an example using CSS and JavaScript?

- **Prompt for a job position summary Prompt:**

Create a summary that showcases my ability to [insert relevant technical skill, e.g., programming language, software, etc.]

- **Define ChatGPT Role**

Prompt:

Act as "position" Interviewer

Act as an English Teacher

Act as a Relationship Coach

Act as a Recruiter

Act as a Lawyer

Act as a Cybersecurity advisor

- **Prompts for Marketers Prompt:**

Can you provide me with some ideas for blog posts about [topic].

Write a product description for my [product or service or company]

Suggest inexpensive ways | can promote my [company] without using social media.

How can I obtain high-quality backlinks to raise the SEO of [website name].

- **Prompts for Developers Prompt:**

What are the key elements of a successful landing page?

What are some effective strategies for creating a strong brand voice?

How can I write more compelling product descriptions?

How to improve my headline writing skills?

How can I use storytelling in my copywriting to engage my audience?

11. Get medical help:

This prompt will turn ChatGPT into an AI doctor that will ask you questions to understand your problem and then provide possible solutions.

I want you to act as an AI assisted doctor. I will provide you with details about a patient, and your task is to use the latest artificial intelligence tools such as medical imaging software and other machine learning programs in order to diagnose the most likely cause of their symptoms. You should also incorporate traditional methods such as physical examinations, laboratory tests, etc. into your evaluation process in order to ensure accuracy. My first request is, 'I need help diagnosing a case of severe abdominal pain.'

12. Make ChatGPT a plagiarism checker:

This prompt will help you turn ChatGPT into a plagiarism checker.

I want you to act as a plagiarism checker. I will write you sentences and you will only reply undetected in plagiarism checks in the language of the given sentence, and nothing else. Do not write explanations in replies. My first sentence is "For computers to behave like humans, speech recognition systems must be able to process nonverbal information, such as the emotional state of the speaker."



13. Create unique selling points

This prompt will help you create amazing ideas for selling anything.

I am providing you with my unique selling points. "Generate a summary that emphasizes my unique selling points and sets me apart from other candidates".

14. Generate Engaging Stories

With this, ChatGPT will tell a story on the topic provided without copying content from anywhere. It will choose the theme itself, you just need to provide the moral you want to focus on.

I want you to act as a storyteller. You will come up with entertaining stories that are engaging, imaginative and captivating for the audience. It can be fairy tales, educational stories or any other type of stories which has the potential to capture people's attention and imagination. Depending on the target audience, you may choose specific themes or topics for your storytelling session e.g., if it's children, then you can talk about animals; if it's adults, then history-based tales might engage them better etc. My first request is 'I need an interesting story on perseverance.'

15. Make ChatGPT Write Poems

This prompt heavily focuses on poetry that evokes emotions, which should work fine for most types of poetry topics.

Although if you want ChatGPT to be funny or witty a little, then you can add a line asking to make it funny.

I want you to act as a poet. You will create poems that evoke emotions and have the power to stir people's soul. Write on any topic or theme but make sure your words convey the feeling you are trying to express in beautiful yet meaningful ways. You can also come up with short verses that are still powerful enough to leave an imprint in readers' minds. My first request is 'I need a poem about love.'

16. You are GPT-4, OpenAI's advanced language model.

Today, your job is to generate prompts for GPT-4 based on assessment during the classroom by acting as a teacher:



49 more prompts:

1. Personal Narrative Prompt: Write about a significant event in your life.
Example: Describe a time when you overcame a personal challenge.
2. Persuasive Prompt: Convince someone to adopt your viewpoint.
Example: Write an essay arguing for or against the death penalty.
3. Expository Prompt: Explain a concept or topic.
Example: Explain the process of photosynthesis.
4. Argumentative Prompt: Argue for or against a particular issue.
Example: Argue for or against the use of genetically modified organisms in agriculture.
5. Descriptive Prompt: Describe a person, place, or object.
Example: Describe your favorite vacation spot.
6. Compare and Contrast Prompt: Compare and contrast two things.
Example: Compare and contrast the advantages and disadvantages of living in a big city versus a small town.
7. Literary Analysis Prompt: Analyze a literary work.
Example: Analyze the symbolism in "The Great Gatsby" by F. Scott Fitzgerald.
8. Definition Prompt: Define a term or concept.
Example: Define the term "civil disobedience."
9. Process Analysis Prompt: Explain how to do something.
Example: Explain how to make a cake.
10. Problem-Solution Prompt: Identify a problem and propose a solution.
Example: Describe the problem of plastic pollution in the ocean and propose a solution.

11. Interview Prompt: Write an interview with someone.
Example: Write an interview with a successful entrepreneur.
12. Cause and Effect Prompt: Identify the causes and effects of a particular phenomenon.
Example: Describe the causes and effects of climate change.
13. Critical Analysis Prompt: Critique a particular work.
Example: Critique a movie you recently watched.
14. Observation Prompt: Describe what you observe.
Example: Describe the view from your window.
15. Reflection Prompt: Reflect on a personal experience.
Example: Reflect on a meaningful experience from your childhood.
16. Research Prompt: Conduct research on a particular topic.
Example: Research the history of the Industrial Revolution.
17. Creative Writing Prompt: Write creatively.
Example: Write a short story about a time traveler.
18. Character Analysis Prompt: Analyze a character from a book or movie.
Example: Analyze the character development of Harry Potter in the "Harry Potter" series.
19. Historical Analysis Prompt: Analyze a historical event.
Example: Analyze the causes and effects of World War II.
20. Interpretive Prompt: Interpret a piece of art or literature.
Example: Interpret the meaning of Vincent van Gogh's "Starry Night."
21. Current Event Prompt: Analyze a current event.
Example: Analyze the impact of the COVID-19 pandemic on global economy.
22. Narrative Prompt: Write a story.
Example: Write a story about a character who discovers a magical world.
23. Personal Response Prompt: Respond to a particular statement or question.
Example: Respond to the statement, "Money can't buy happiness."
24. Cultural Analysis Prompt: Analyze a cultural phenomenon.
Example: Analyze the impact of hip-hop culture on American society.
25. Ethics Prompt: Discuss ethical issues.
Example: Discuss the ethical implications of animal testing.
26. Rhetorical Analysis Prompt: Analyze the rhetorical strategies used in a particular text.
Example: Analyze the use of pathos in a political speech.
27. Textual Analysis Prompt: Analyze a particular text.
Example: Analyze the use of metaphors in Shakespeare's "Macbeth."
28. Satirical Prompt: Write a satirical piece.
Example: Write a satirical news article about a ridiculous political decision.
29. Literary Response Prompt: Respond to a literary work.
Example: Respond to the message of Maya Angelou's "Still I Rise."
30. Media Analysis Prompt: Analyze a particular form of media. Example: Analyze the representation of women in advertising.
Sociological Analysis Prompt: Analyze a social phenomenon. Example: Analyze the impact of social media on society.
31. Political Philosophy Prompt: Analyze political theories and ideologies. Example: Analyze the differences between socialism and capitalism.
32. Environmental Inquiry Prompt: Investigate an environmental issue. Example: Investigate the effects of air pollution on human health.
33. Health and Wellness Prompt: Discuss a health-related topic. Example: Discuss the benefits of meditation on mental health.

34. Education Reform Prompt: Analyze the current education system and propose reforms. Example: Analyze the effects of standardized testing on student learning and propose alternative assessment methods.
35. Social Justice Prompt: Discuss issues related to social justice. Example: Discuss the impact of systemic racism on marginalized communities.
36. Leadership Prompt: Analyze different leadership styles and their effectiveness. Example: Analyze the leadership style of Nelson Mandela and its impact on South Africa.
37. Gender and Sexuality Prompt: Discuss issues related to gender and sexuality. Example: Discuss the effects of gender norms on mental health.
38. Cultural Competence Prompt: Analyze the importance of cultural competence in different contexts. Example: Analyze the importance of cultural competence in healthcare.
39. International Development Prompt: Analyze issues related to international development. Example: Analyze the impact of foreign aid on developing countries.
40. Human Rights Prompt: Discuss issues related to human rights. Example: Discuss the impact of the Universal Declaration of Human Rights on global justice.
41. Social Media Analysis Prompt: Analyze the effects of social media on mental health. Example: Analyze the impact of cyberbullying on adolescent mental health.
42. Race Relations Prompt: Analyze issues related to race relations. Example: Analyze the impact of the Black Lives Matter movement on American society.
43. Public Health Prompt: Discuss issues related to public health. Example: Discuss the impact of vaccination on public health.
44. Political Economy Prompt: Analyze the relationship between politics and the economy. Example: Analyze the impact of neoliberalism on economic inequality.
45. Immigration Policy Prompt: Analyze current immigration policies and propose reforms. Example: Analyze the impact of the current US immigration policy on immigrant families and propose alternatives.
46. Mental Health Prompt: Discuss issues related to mental health. Example: Discuss the effects of stigma on mental health.
47. Social Work Prompt: Analyze the role of social workers in different contexts. Example: Analyze the impact of social workers on child welfare.
48. Family Dynamics Prompt: Analyze the impact of family dynamics on mental health. Example: Analyze the effects of divorce on children's mental health.
49. Community Development Prompt: Analyze community development and propose strategies for improvement. Example: Analyze the impact of gentrification on urban communities and propose solutions to mitigate its negative effects.

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