

“Smart prompten, klüger forschen”: Prompt Engineering mit ChatGPT

FH JOANNEUM. Graz. 07.02.2023

Slides <http://tinyurl.com/PE-FH-24>

Christopher Pollin

<https://chpollin.github.io>

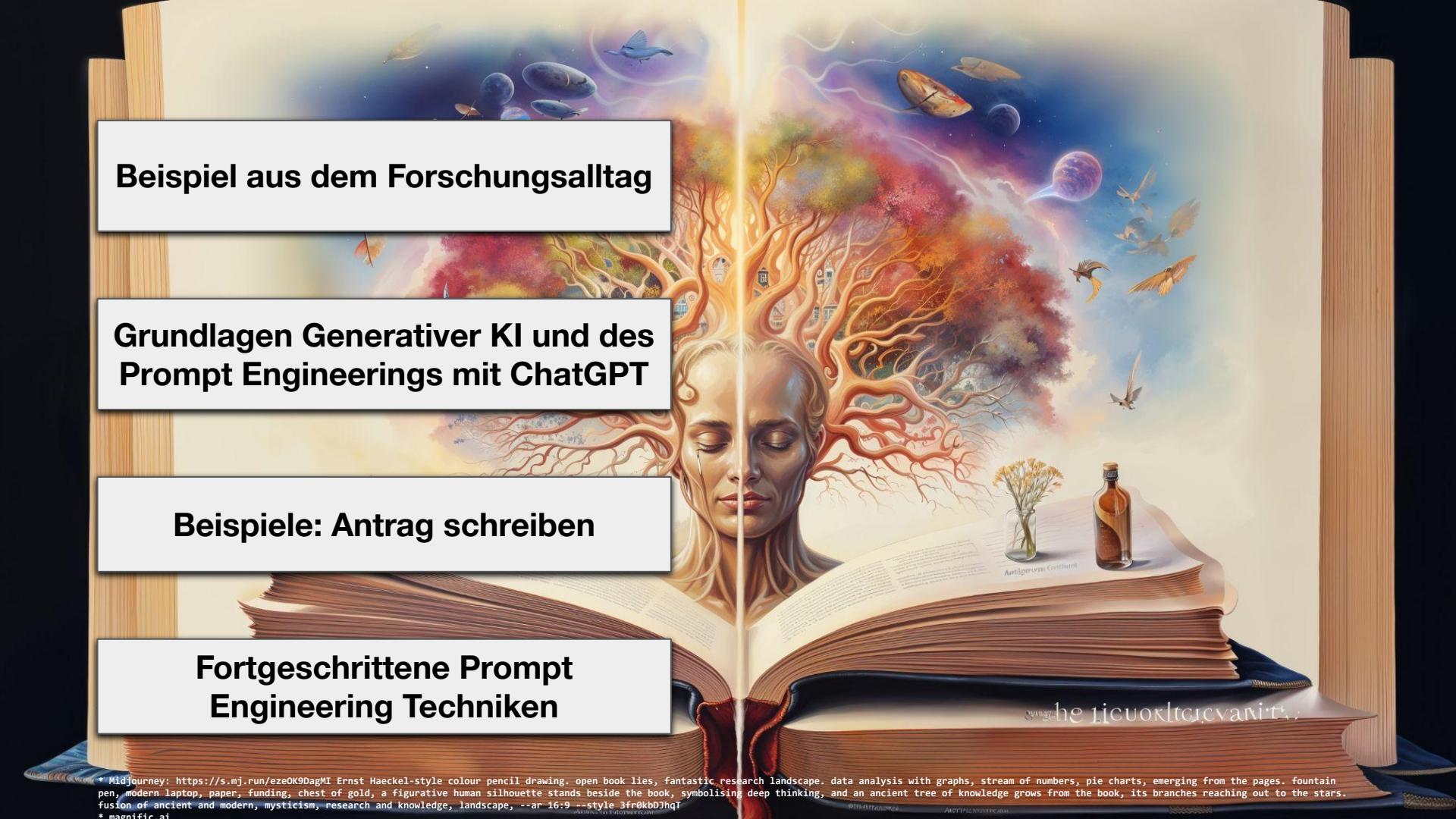
Zentrum für Informationsmodellierung, Graz

<https://informationsmodellierung.uni-graz.at/de/>

Digital Humanities Craft OG

www.dhcraft.org





Beispiel aus dem Forschungsalltag

Grundlagen Generativer KI und des Prompt Engineering mit ChatGPT

Beispiele: Antrag schreiben

**Fortgeschrittene Prompt
Engineering Techniken**

* Midjourney: <https://s.mj.run/ezeOK9DagMI> Ernst Haeckel-style colour pencil drawing. open book lies, fantastic research landscape. data analysis with graphs, stream of numbers, pie charts, emerging from the pages. fountain pen, modern laptop, paper, funding, chest of gold, a figurative human silhouette stands beside the book, symbolising deep thinking, and an ancient tree of knowledge grows from the book, its branches reaching out to the stars.

* magnific ai



GPT-4 ist ein sehr leistungsfähiges Forschungsinstrument!

- Pollin, C. (2023). Workshopreihe "Angewandte Generative KI in den (digitalen) Geisteswissenschaften" (v1.0.0). Zenodo.
<https://doi.org/10.5281/zenodo.10065626>

Paper “Who wants to enhance their cognitive abilities? Potential predictors of acceptance of cognitive enhancement”

Variables

Pbn_Nr	participant code (1-263)
gruppenzuteilung	Randomization group (1 or 2) for the order of scenarios
sex	self-reported sex (0 = diverse, 1 = female, 2 = male)
age	Age (18-64)
edu	highest level of education (1 = no school diploma, 2 = compulsory schooling, 3 = apprenticeship, 4 = A-levels/high school diploma, 5 = bachelor's degree, 6 = master's degree, 7 = doctoral degree)
studying	Currently studying (1 = yes, 2 = no)
tech_interest	Interested in technology (1 = yes, 2 = no)
Enhancement scenarios	
Based on: https://doi.org/10.1007/s41465-022-00244-9	
EM_01 = pharmacological enhancement EM_02 = transcranial electrostimulation EM_03 = genetic enhancement EM_04 = mind-uploading EM_05 = working-memory training EM_06 = gaming EM_07 = neuro-feedback training EM_08 = Brain-Machine-Interface	
EM_01_accept ...	Acceptance of respective enhancement method ("1 - strongly disagree" to "6 - strongly agree")
EM_08_accept	Acceptance of respective enhancement method ("1 - strongly disagree" to "6 - strongly agree")
DataAnalyses/Enhancement_Codebook.pdf	
disagree to 6 strongly agree ,	

23	23	1	1	20	4
24	24	1	2	23	4
25	25	1	1	20	4

- Aggregated test data and the codebook:
<https://osf.io/2s3ze>
- Pre-registration at <https://osf.io/urwxt>

L_ac	I	J	K	L	M	N	O	P
EM_01_pr	EM_01_us	EM_02_ac	EM_02_pr	EM_02_us	EM_03_ac	EM_03_pr	EM_03_us	
3	2	2	2	3	2	4	3	5
5	5	5	4	3	4	5	3	5
6	2	4	6	3	4	3	2	1
2	5	4	4	6	4	2	2	2
3	5	5	3	5	5	1	2	5
3	6	5	2	5	4	1	5	4
4	5	4	5	5	5	5	6	4
2	4	4	4	3	4	4	4	4
1	3	2	1	5	5	2	5	6
3	5	5	3	3	2	5	4	6
5	6	6	1	4	5	4	5	4
5	5	5	5	5	5	5	5	5
1	4	4	3	3	3	1	4	4
3	4	4	4	4	4	3	3	3
2	5	5	4	4	5	1	5	5
1	2	3	5	6	5	3	4	3
4	5	4	2	5	3	2	5	2
5	5	5	3	3	3	5	4	4
3	4	4	3	3	3	3	3	4
6	4	5	6	3	4	3	4	4

DataAnalyses/Enhancement_Data_SPSS_shareable.xlsx

Prompt Engineering + Coder Interpreter (ChatGPT Plus)

You are an expert in psychology and data visualization. Here is a dataset from the project "Who wants to enhance their cognitive abilities? Potential predictors of acceptance of cognitive enhancement". This study aims to investigate the relationship between the acceptance of "active" and "passive" enhancement methods and general intelligence from three different perspectives: actual, self-estimated, and implicit theories of intelligence.

Persona Modelling

Perform the following steps:

- * Read the csv very carefully
- * Analyze the given research questions
- * Define user stories based on the data, codebook, and research questions
- * Use the user stories as contextual information for creating data visualizations to answer and work with the given research questions.
- * Implement the data visualizations

Context

Rules:

- * Always work with the whole data set

Tasks

Research Questions:

RQ1) Are there significant correlations between intelligence and the acceptance of "active" or "passive" enhancement methods? (exploratory research question)

RQ2) Are there significant correlations between a persons' self-estimated intelligence and acceptance of "active" or "passive" enhancement methods? (exploratory research question)

Code book:

...

Let's work on this problem step-by-step. This is very important to my career!

"Data"

Chain-of-Thought
(CoT) Prompting

Emotional
prompting

ADA and Prompt Engineering

The dataset has been successfully loaded. Here's an overview:

- It contains various columns including demographic data (like `sex`, `age`, `edu`), information about participants' attitudes towards technology (`tech_interest`), responses to enhancement scenarios (`EM_01_accept` to `EM_08_accept`, etc.), self-estimated intelligence scores (`SE_IQ`, `SEnum_IQ`, etc.), actual intelligence test scores (`IQ_ISA_num`, `IQ_ISA_verb`, etc.), and various personality and value scales (`ITIS_mean`, `BFI_K_extraversion`, etc.).
- The dataset appears to be comprehensive, with multiple variables that could be relevant to the research questions.

1. RQ1: Correlation between intelligence and acceptance of “active” or “passive” enhancement methods.

- This question suggests looking at correlations between actual intelligence scores (`IQ_ISA_*` and `IQ_global`) and acceptance of enhancement methods (`AoE_passiv`, `AoE_aktiv`).

2. RQ2: Correlation between self-estimated intelligence and acceptance of “active” or “passive” enhancement methods.

- This question focuses on the relationship between self-estimated intelligence (`SE_IQ`, `SEnum_IQ`, `SEverb_IQ`, `SEspat_IQ`, `SEFBIQ_*`) and acceptance of enhancement methods (`AoE_passiv`, `AoE_aktiv`).

Read data

**Analyze research
questions**

ADA and Prompt Engineering

1. User Story: Exploring Correlations for Actual Intelligence

- As a researcher, I want to visualize the correlation between participants' actual intelligence scores (numerical, verbal, spatial, and global) and their acceptance of active and passive cognitive enhancement methods, so I can understand if there's a relationship between cognitive ability and attitudes towards cognitive enhancement.

2. User Story: Investigating Self-Estimated Intelligence Correlations

- As a researcher, I aim to explore the relationship between participants' self-estimated intelligence (general, numerical, verbal, spatial) and their acceptance of different enhancement methods (active and passive), to determine how self-perception of intelligence influences attitudes towards enhancement.

3. User Story: Demographic Differences in Enhancement Acceptance

- As a researcher, I am interested in examining how demographic variables (like age, sex, education) relate to the acceptance of cognitive enhancement methods, providing insights into which groups are more inclined towards such technologies.

4. User Story: Impact of Technology Interest on Enhancement Views

- As a researcher in the field of psychology and technology, I want to understand if an individual's interest in technology correlates with their acceptance of active and passive cognitive enhancements, to see if tech-savviness influences openness to such methods.

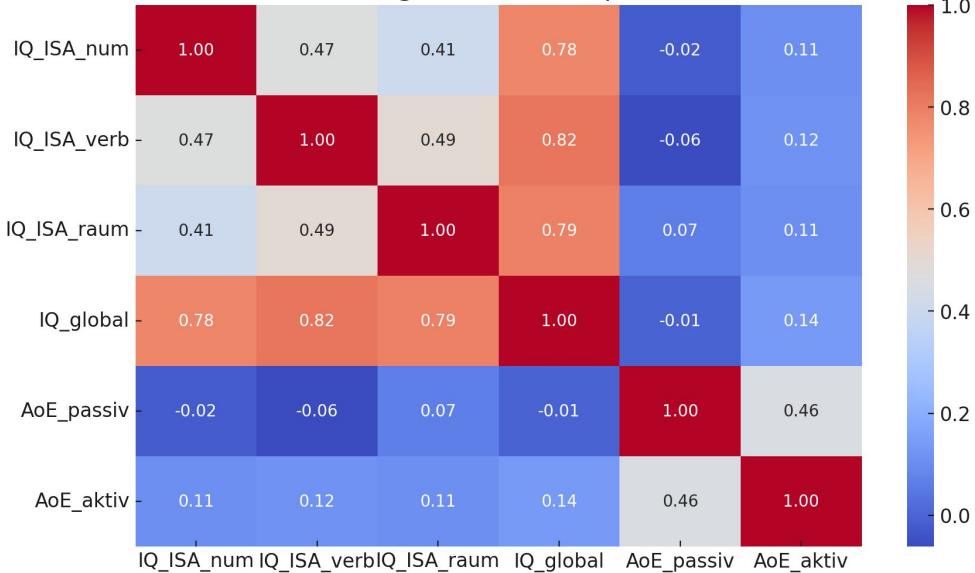
5. User Story: Role of Personality Traits in Cognitive Enhancement Acceptance

- As a researcher, I wish to investigate how various personality traits and values (like extraversion, agreeableness, openness, etc.) correlate with attitudes towards cognitive enhancements, to uncover any psychological factors that might influence such attitudes.

User Stories for Data Analysis and Visualization

ADA and Prompt Engineering: Result for User Story 1

Correlation between Actual Intelligence and Acceptance of Enhancement Methods



The heatmap above visualizes the correlations between actual intelligence scores (numerical, verbal, spatial, and global) and the acceptance of active and passive cognitive enhancement methods.

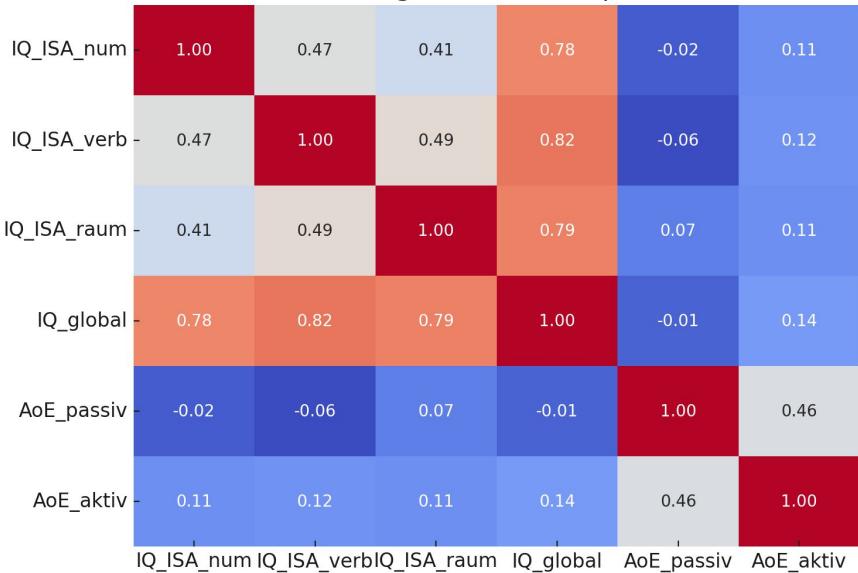
Key Observations:

- The correlation coefficients are displayed in each cell, with values close to +1 or -1 indicating strong positive or negative correlations, respectively, and values near 0 suggesting no correlation.
- The color intensity reflects the strength and direction of the correlation, with warmer colors (red) indicating positive correlations and cooler colors (blue) representing negative correlations.

"Chatting" about the output with GPT-4

ADA and Prompt Engineering: Python Code

Correlation between Actual Intelligence and Acceptance of Enhancement



Analysis

python

Copy code

```
import seaborn as sns
import matplotlib.pyplot as plt

# User Story 1: Correlation between actual intelligence scores and acceptance of enhancement

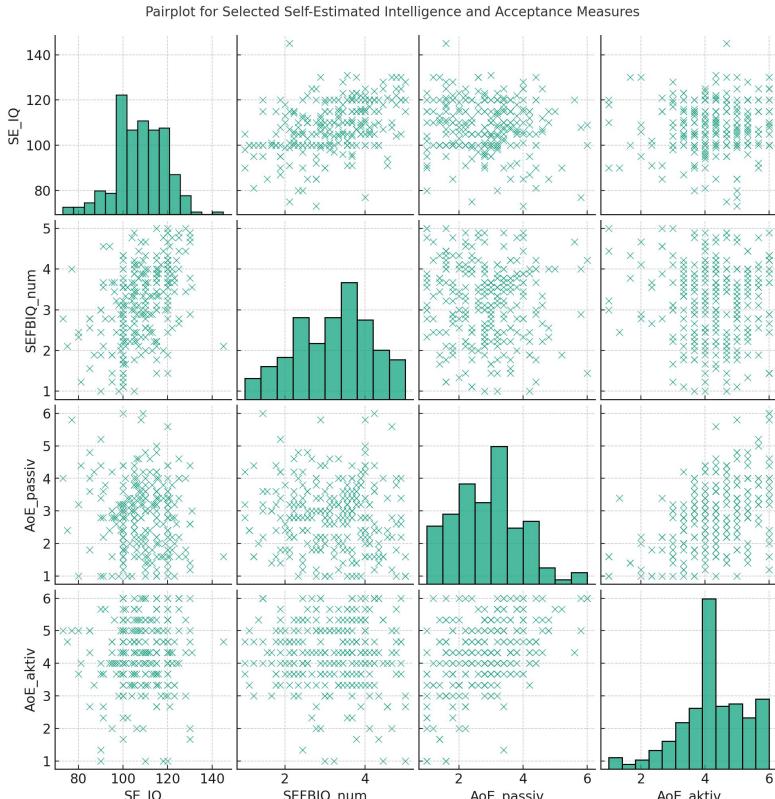
actual_intelligence_cols = ['IQ_ISA_num', 'IQ_ISA_verb', 'IQ_ISA_raum', 'IQ_global']
acceptance_cols = ['AoE_passiv', 'AoE_aktiv']

# Creating a dataframe for correlation analysis
correlation_data = data[actual_intelligence_cols + acceptance_cols]

# Calculating correlation matrix
correlation_matrix = correlation_data.corr()

# Plotting the heatmap
plt.figure(figsize=(10, 6))
sns.heatmap(correlation_matrix, annot=True, cmap='coolwarm')
plt.title('Correlation between Actual Intelligence and Acceptance of Enhancement')
plt.show()
```

ADA and Prompt Engineering: Result for User Story 2



Iteratively improve and customize visualizations

Analysis of Pairplot for Selected Variables

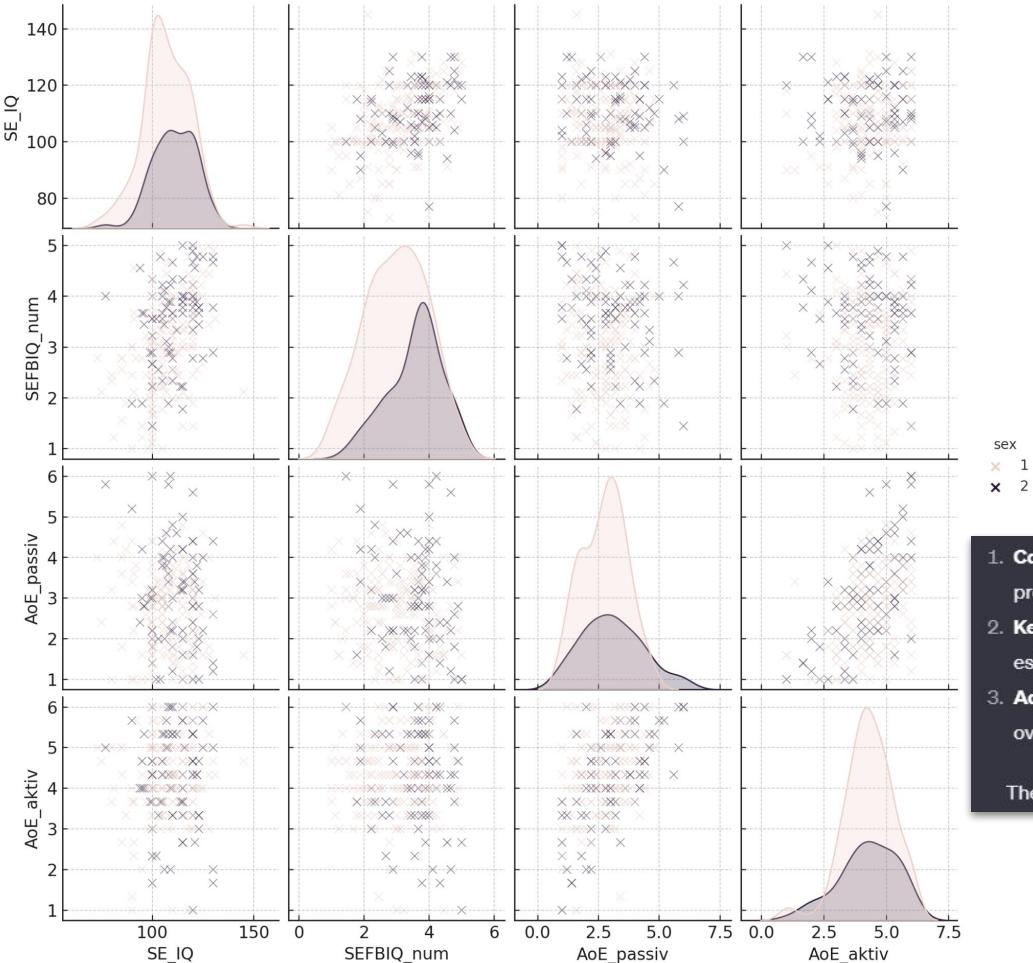
Observations:

- Individual Data Points:** The pairplot shows individual data points, which is useful for observing distributions and outliers.
- Comparative View:** It allows for a comparative view of multiple bivariate relationships simultaneously.

Potential Improvements:

- Scatter Plot Density:** For areas with high data point density, consider using a hexbin plot or 2D density plot for clarity.
- Scale and Range Consistency:** Ensure the scales and ranges for each plot are consistent to make comparison easier.
- Color Coding:** Introducing a color dimension based on another relevant variable (like sex or education level) could provide additional insights.
- Enhanced Diagonal Plots:** Instead of simple histograms on the diagonal, consider kernel density estimates for a more nuanced view of distributions.
- Plot Titles and Labels:** More descriptive titles and clear labels for each axis would enhance understanding.
- Reducing Overplotting:** If overplotting is an issue, adjusting point transparency or using jitter can help distinguish overlapping points.

Improved Pairplot for Selected Self-Estimated Intelligence and Acceptance Measures



ADA and Prompt Engineering: Iteratively improve and customize visualizations

1. **Color Coding Based on 'Sex':** The plots now include color coding based on the 'sex' variable, providing an additional layer of information.
2. **Kernel Density Estimates on Diagonal:** The diagonal plots have been switched to kernel density estimates (KDE) for a more nuanced view of the distribution of each variable.
3. **Adjusted Point Transparency:** The transparency of points has been increased to reduce overplotting and make individual data points more distinguishable.

These improvements should enhance the interpretability of the pairplot, [5].

Large Language Models (LLM)

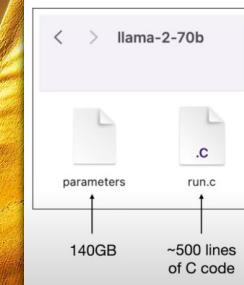
Viele Daten und Ressourcen!

Deep Learning
Transformer-Architekturen

Pre-Training
Fine-Tuning

Reinforcement learning from
human feedback - RLHF

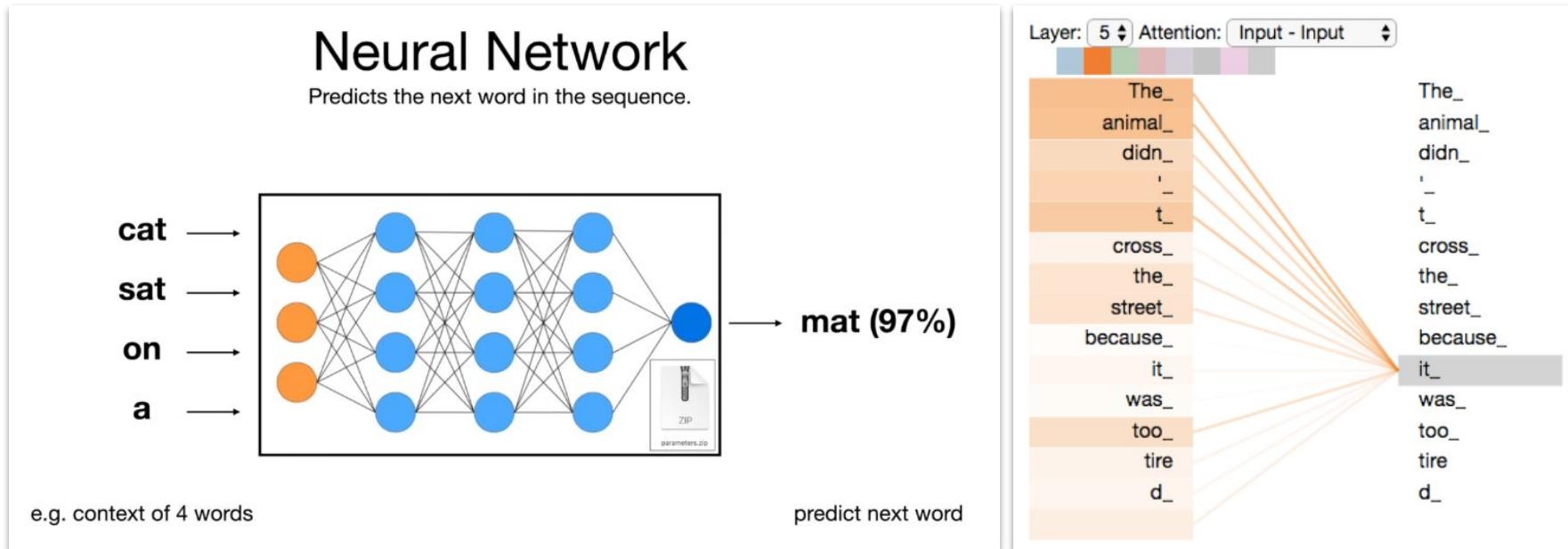
“LLM are like having a Zip-File of the internet”



* Midjourney: https://s.mj.run/g7Mm_h0ZH9w hyper realistic and surreal gigantic yellow folder with a zipper, like a desktop icon, ultra detailed, salvador dali desert background, landscape --ar 16:9 --v 6.0 --style raw --stylize 800
* magnific.ai

Andrej Karpathy. [1hr Talk] Intro to Large Language Models.
https://www.youtube.com/watch?v=zikBMFhNj_o&list=WL&index=16

Transformer-Architektur: “Attention Is All You Need”

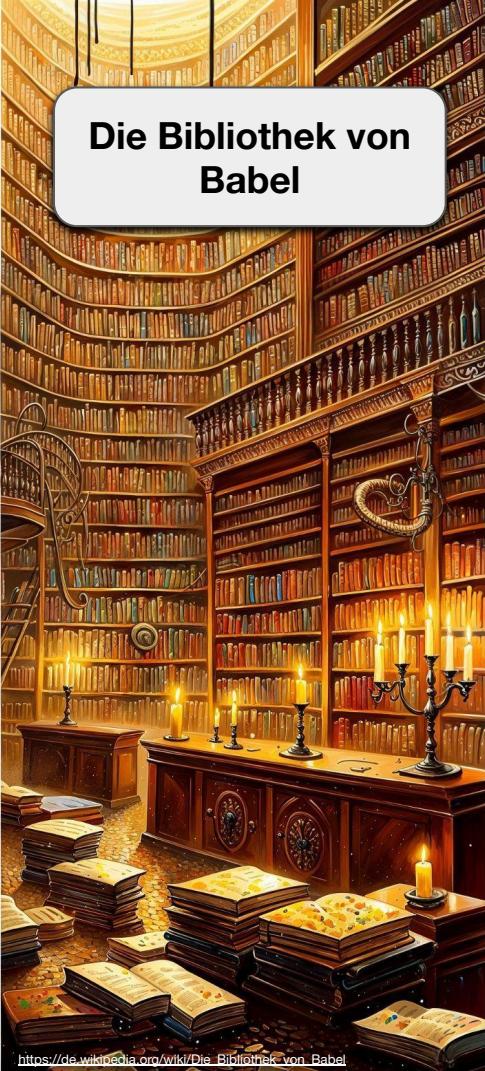


Andrej Karpathy. [1hr Talk] Intro to Large Language Models.
https://www.youtube.com/watch?v=zjkBMFhNj_g&list=WL&index=16

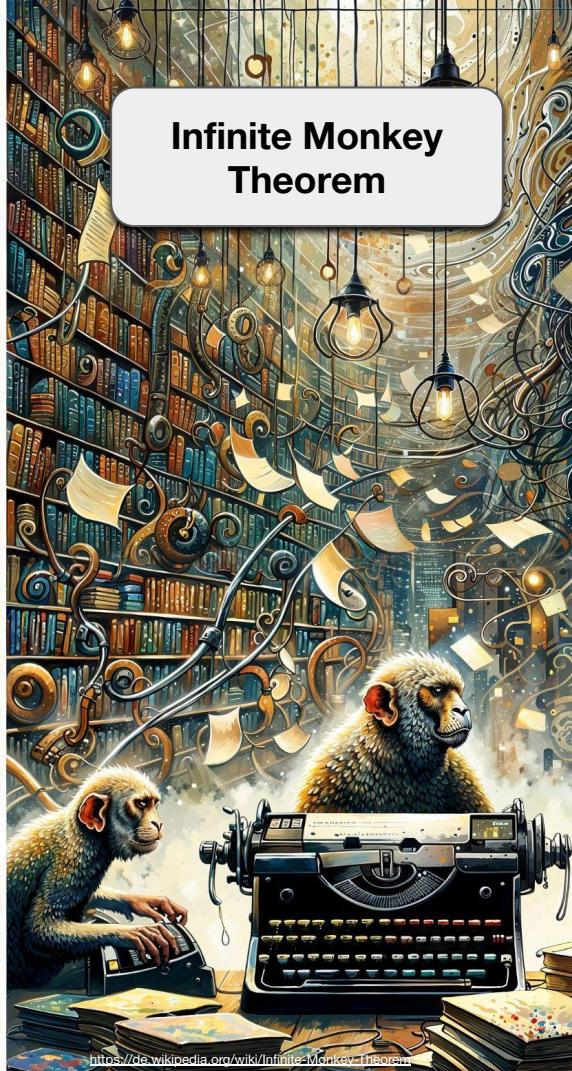
<https://alammar.github.io/illustrated-transformer/>

Vaswani, Ashish, Noam Shazeer, Niki Parmar, Jakob Uszkoreit, Llion Jones, Aidan N. Gomez, Lukasz Kaiser, and Illia Polosukhin. “Attention Is All You Need.” arXiv, August 1, 2023. <https://doi.org/10.48550/arXiv.1706.03762>

Die Bibliothek von Babel



Infinite Monkey Theorem



Stochastic Parrot



DALL-E 3: A triptych where each section is visually distinct. Section 1: An ancient library filled with tall wooden bookshelves, dusty tomes, and dim candlelight, evoking a sense of age and wisdom. Section 2: Multiple monkeys at individual typewriters in a surreal, abstract space, with papers flying around, suggesting chaotic creativity. Section 3: A single parrot speaking into a microphone, with a background of digital screens showing strings of text and code, representing the voice output of text generated by algorithms.

magnific.ai

https://de.wikipedia.org/wiki/Die_Bibliothek_von_Babel

<https://de.wikipedia.org/wiki/Infinite-Monkey-Theorem>

Bender, Emily M., Timnit Gebru, Angelina McMillan-Major, and Shmargaret Shmitchell. "On the Dangers of Stochastic Parrots: Can Language Models Be Too Big? 🦜." In *Proceedings of the 2021 ACM Conference on Fairness, Accountability, and Transparency*, 610–23. FAccT '21. New York, NY, USA: Association for Computing Machinery, 2021. <https://doi.org/10.1145/3442188.3445922>.

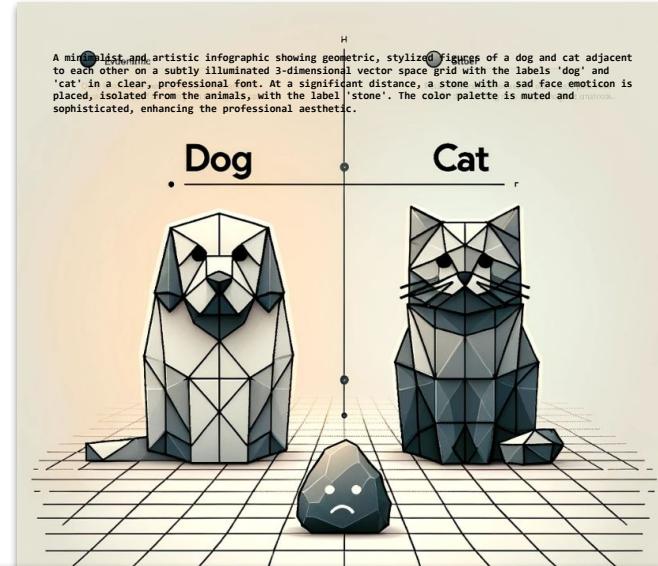
Token & Embedding

Tokens	Characters
15	33

```
<body>  
  this is a test  
</body>
```

Token

- Teile von Text und Input für LLM
- 1 Token entspricht ~4 Zeichen englischen Standardtextes 100 Token ~= 75 Wörter.

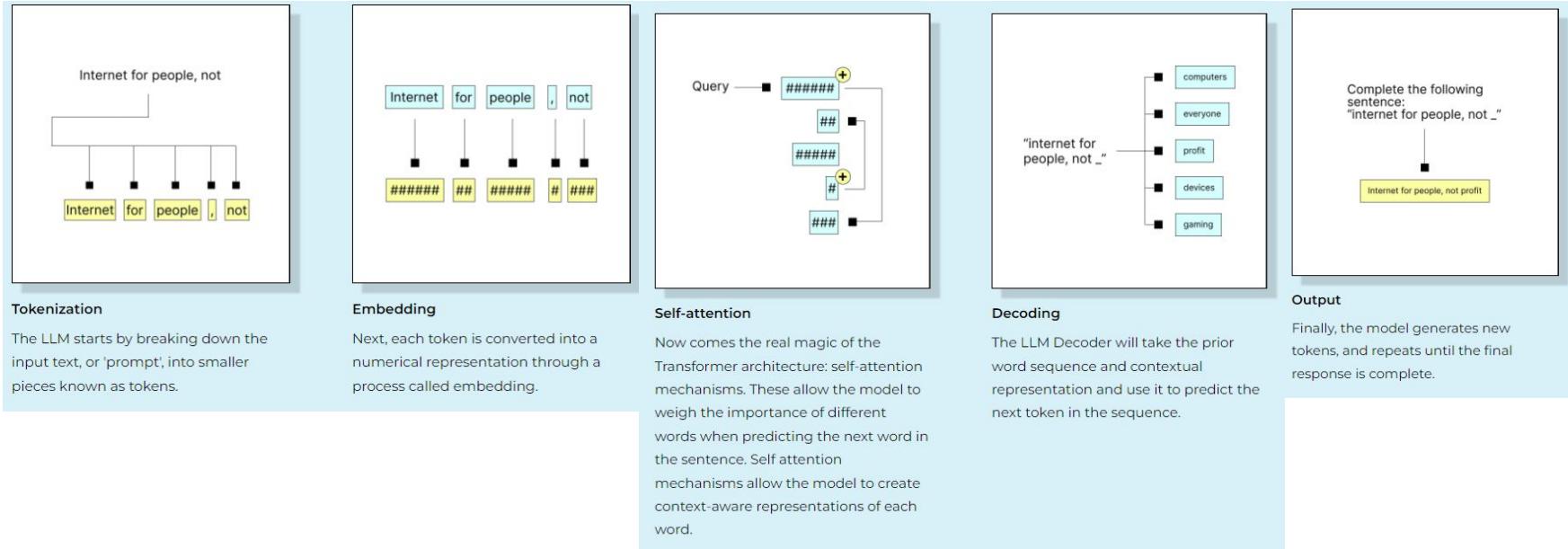


Embedding

- Darstellung des Textes als Zahlen in einem mehrdimensionalen Vektorraum.
- Stellt die "Bedeutung" des Textes im LLM dar.

- <https://platform.openai.com/docs/introduction/key-concepts>
- <https://platform.openai.com/docs/guides/embeddings/use-cases>
- <https://help.openai.com/en/articles/4936856-what-are-tokens-and-how-to-count-them>

“Attention is all you need”: Transformer Architektur



Bilder: <https://ai-guide.future.mozilla.org/content/ai-basics>

Vaswani, Ashish, Noam Shazeer, Niki Parmar, Jakob Uszkoreit, Llion Jones, Aidan N. Gomez, Łukasz Kaiser, and Illia Polosukhin. “Attention Is All You Need.” arXiv, August 1, 2023. <https://doi.org/10.48550/arXiv.1706.03762>.

Prompt & Prompt Engineering

Prompt

ist die natürlichsprachliche Eingabe, die dem Modell (z. B. LLM) zur Verfügung gestellt wird und auf die das Modell reagiert.

Prompt Engineering

ist der Prozess des Entwerfens, Verfeinerns und Optimierens von Prompts, um die Absicht der User*innen effektiv an ein LLM zu kommunizieren.

<https://www.promptingguide.ai/introduction/basics>

<https://platform.openai.com/docs/guides/prompt-engineering>



You

write a one pager about the research proposal idea "teiCrafter"!

< 2 / 2 >



ChatGPT

Title: TeiCrafter: A Novel Approach to Crafting Personalized, AI-Enhanced Learning Experiences

Introduction:

In an age where education is increasingly becoming personalized and technology-driven, there exists a significant opportunity to revolutionize how we approach learning and teaching. The project, "TeiCrafter," aims to harness the power of artificial intelligence (AI) to create a dynamic, adaptive, and personalized learning environment. The core idea is to develop an AI-based platform that intelligently crafts and customizes educational content and experiences based on individual learner profiles, thereby enhancing the efficacy and engagement of the learning process.

Objective:

The primary objective of TeiCrafter is to design and implement an AI-driven system that:

1. Analyzes learners' academic performance, learning styles, preferences, and engagement levels.
2. Adapts educational content in real-time to suit individual learning needs.
3. Provides actionable insights and feedback to educators and learners.
4. Enhances the overall learning experience through interactive and engaging tools.

Research Questions:

1. How can AI algorithms effectively personalize learning content based on individual profiles?



Prompt & Prompt Engineering



You

You are an expert in writing a One Pager to pitch the research and industry proposal idea "teiCrafter". Your primary objective is to write a technical and academic grant proposal for the "teiCrafter" project. The proposal will be structured with clear chapters and sub-chapters focusing on the transformation of unstructured text into TEI XML using Large Language Models (LLM) such as GPT-4.

First, think about the topic step by step and make an outline with short summaries for each chapter! Then ask me as many questions as you need to understand the subject.

<https://chat.openai.com/share/cfb7cdb2-3047-4a1f-8761-0a3c22396415>

- **Persona Modelling:**
“You are an expert...”
- **Context Information**
- **Chain of Thought:**
“Let's think step by step”
- **Prompting Strategies:**
“Then ask me as many questions...”



Based on your responses, the outline for the "teiCrafter" grant proposal can be refined to better align with the project specifics:

1. Introduction

- **Summary:** Introduce "teiCrafter" focusing on the transformation of historical texts (e.g., correspondences, medieval sources) into TEI XML using LLMs. Highlight the project's relevance in digital humanities and cultural heritage preservation.

2. Background and Significance

- **Summary:** Elaborate on the significance of TEI XML in historical text analysis. Discuss the challenges in encoding diverse historical texts and the role of automation in addressing these challenges.

3. Objectives and Goals

- **Summary:** State objectives such as creating an efficient, automated process for encoding historical texts into TEI XML, enhancing the accessibility of digital humanities resources, and facilitating cultural heritage preservation.

4. Project Description

- **Summary:** Detail the approach for integrating LLMs with historical text sources. Mention phases like data preparation, model training (with a focus on historical texts), and developing a user-friendly interface.

5. Methodology

- **Summary:** Discuss the use of technologies like LangChain, Rust, and prompt engineering for LLM integration. Explain the development of a web frontend for user interaction and data processing.

6. Innovation and Technical Challenges

- **Summary:** Highlight the innovative approach of using LLMs in TEI XML transformation. Address the technical challenge of ensuring the output's correctness and quality, and strategies for quality control and verification.

7. Impact and Applications

Kontext, Kontext, Kontext!

Jetzt geht es in die richtige Richtung!

<https://chat.openai.com/share/e/cfb7cdb2-3047-4a1f-8761-0a3c22396415>

Hands-On: ChatGPT ausprobieren und einen Idee-Pitch erstellen

- Öffnen Sie ChatGPT: <https://chat.openai.com>
- Passen Sie die Prompt-Vorlage an und probieren Sie es mit einem Ihrer Themen aus
- Wie finden Sie das Ergebnis? Ist es Ihre Idee? Was ist schlecht an der Antwort, was ist gut an der Antwort?
... wir können durch Prompt Engineering an vielen Stellen schrauben!

Prompt-Vorlage (<domain>, <title>, <topic> anpassen)

You are an expert in <domain> and your task is to write a one-page idea pitch for the research and industry proposal entitled “<title>”. Your primary objective is to write a technical and scientific grant proposal for this project. The proposal will be structured with clear chapters and sub-chapters focusing on the following main topics:

- * <topic>
- * <topic>
- * <topic>

First, think about the topic step by step and make an outline with short summaries for each chapter!

~10 min



You

You are an expert in developing good daily habits and your task is to write a one-page idea pitch for the research and industry proposal entitled 'How to do more sports and meditate'. Your main objective is to write a technical and scientific grant proposal for this project. The proposal will be structured with clear chapters and sub-chapters focusing on the following main topics:

- * Daily schedule
- * Teaching strategies
- * Sport, variation, enjoyment of sport

First, think about the topic step by step and make an outline with short summaries for each chapter!



**MORE • SPORTS
AND MEDITAE**

"Daily Habits"-One-Pager

1. Introduction

- **Objective:** Outline the project's aim to increase engagement in sports and meditation through habit formation.
- **Background:** Emphasize the importance of regular physical activity and meditation for overall well-being.

2. Daily Schedule

- **Understanding Habit Formation:** Discuss the psychological basis of habit formation and its relevance to daily routines.
- **Designing an Effective Schedule:** Provide strategies for incorporating sports and meditation into daily life, considering time management and individual lifestyles.
- **Adaptability and Flexibility:** Address the need for schedules to be adaptable to individual needs and unforeseen circumstances.

3. Teaching Strategies

- **Educational Approaches:** Explore different pedagogical techniques for teaching sports and meditation, including digital platforms and in-person coaching.
- **Behavioral Change Techniques:** Discuss methods to encourage behavioral change, such as positive reinforcement and goal setting.
- **Monitoring and Feedback:** Highlight the importance of tracking progress and providing feedback to maintain motivation.

4. Sport, Variation, Enjoyment of Sport

- **Choosing the Right Sport:** Guide on selecting sports based on individual preferences, abilities, and goals.



* Midjourney: <https://s.mj.run/tcdb6wtkjz4>
engineer wizard, in front of computer,
workshop, comic style, Working with tools,
welding --ar 32:18
* magnific.ai

Einführung in das Prompt Engineering - Prinzipien und Techniken

Was kann ChatGPT?

Prompt Engineering
Prinzipien

Anwendungsbeispiele

Was kann ChatGPT?

- **Zusammenfassen** “Summarize the following text”
- **Klassifizieren** “Classify the following text”
- **Destillieren** “Remove all the noise from the following text”
- **Extrahieren** “Extract the dates from the following text”
- **Übersetzen** “Translate the following text to <language>”
- **Text generieren** “Write a <type> about <topic>.”

Was kann ChatGPT?

- **Erklären** “Explain <topic> to me”
- **Feedback** “Give me (critical) feedback on the following text”.
- **Verbessern** “Improve the following text|code”.
- **Analysieren** “Analyse the following data set”

- GPT Masterclass: 4 Years of Prompt Engineering in 16 Minutes. <https://www.youtube.com/watch?v=aq7fnqzeaPc&list=WL&index=11>
- <https://platform.openai.com/docs/guides/prompt-engineering/six-strategies-for-getting-better-results>

Prompt Engineering Prinzipien

- **Spezifität und Klarheit**
Die Aufforderungen sollten klar und eindeutig formuliert sein, um ungenaue oder unerwünschte Ergebnisse zu vermeiden.
 - **Zeit zum “Nachdenken” einplanen**
Es ist wichtig LLMs genügend Zeit zu geben, um Informationen zu verarbeiten.
 - **Kontext und Beispiele verwenden**
Die Bereitstellung von Kontext und Beispielen kann die Qualität und Relevanz der Antworten des Modells verbessern.
 - **Iterativer Ansatz**
Die Entwicklung von Prompts erfordert oft wiederholte Anpassungen, daher ist es wichtig, eine offene Haltung und die Bereitschaft zu bewahren, die Prompts auf der Grundlage der erhaltenen Antworten zu verfeinern.
 - **Verstehen der Fähigkeiten von GPT**
Das Modell eignet sich hervorragend zum Zusammenfassen, zum Ableiten von Informationen, zum Konvertieren von Daten in verschiedene Formate, zum Generieren von Ideen, etc.
 - **Explizite Einschränkungen verwenden**
Das Einfügen klarer Grenzen oder Richtlinien in der Prompt kann helfen zu kontrollieren, wie das Modell reagiert.
 - **Vermeiden Sie Überlastung**
Zu komplexe oder zu viele Aufgaben auf einmal können für das Modell problematisch sein und zu ungenauen oder unvollständigen Antworten führen. Oft ist es ratsam, solche Anforderungen in überschaubare Segmente aufzuteilen.
 - **Multimodale Betrachtung**
KI Modelle nicht mehr nur textbasiert. Ein weiteres Prinzip kann sein, zu überlegen, wie Prompts in multimodalen Modellen (Kombination von Text, Bild, Audio etc.) funktionieren.
-
- ChatGPT Prompt Engineering for Developers.
<https://www.deeplearning.ai/short-courses/chatgpt-prompt-engineering-for-developers/>
 - <https://platform.openai.com/docs/guides/prompt-engineering/strategy-write-clear-instructions>

Zusammenfassen

First read the text then summarise the text between the delimiters '''' and return a markdown table.

Trennung von Anweisungen und Input (Daten, Text, ...). Es können beliebige Delimiter verwendet werden. Aber '''' repräsentiert in Markdown Code Blocks.

Ausgabeformat klar definieren.

Reihenfolge der Aufgaben festlegen: erst zusammenfassen, dann die Tabelle erzeugen.

<https://chat.openai.com/share/27d03f4c-01b8-44db-90d9-25762f3cd891>
<https://platform.openai.com/docs/guides/prompt-engineering>



You

First summarise the text between the delimiters '''' and then return a markdown table.

Sharing the CROWN - Establishing a Workflow from Collection Data to Linked Research Data



The Imperial European history Vienna (KHM) comprehensive components



ChatGPT

The text describes the CROWN project, a comprehensive analysis of the Imperial Crown of the Holy Roman Empire, undertaken by the Kunsthistorisches Museum in Vienna and the Institute Centre for Information Modelling at the University of Graz. The project aims to model, transform, and publish museum data as FAIR research data, using a specialized workflow involving TMS software, semantic web technologies, and domain-specific ontologies. The workflow involves several steps: creating an ontology, transforming data from TMS to RDF, semantic enrichment, and implementing a web prototype for data representation. The project also focuses on documentation for future reuse.

Section	Description
Overview	Analysis of the Imperial Crown using interdisciplinary methods, recording data in TMS, and cooperation with the University of Graz.
Main Goal	Develop a workflow for transforming museum collection data into FAIR research data using tools like TMS, with a focus on specialized research domains.
Line Of Actions & Work Packages	1. Ontology modeling (2 months). 2. Mapping and exporting data to LOD and FAIR dataset (3 months). 3. Semantic enrichment using reconciliation and knowledge bases (3 months). 4. Implementing a web prototype for data representation (3 months). 5. Documentation of the workflow (1 month).
Specific Challenges & Approaches	Use of TMS for data management, development of domain-specific ontology, conversion of CSV to RDF, semantic enrichment via Wikidata, and implementation of a web prototype in GAMS.
Budget and Institutional Support	Covers funding and in-kind costs for both Kunsthistorisches Museum and the Institute Centre for Information Modelling.

Erklären

Sie sind Experte für digitale Geisteswissenschaften. Erklären Sie den folgenden Forschungsantrag so, dass ein 14-Jähriger ihn verstehen würde, und versuchen Sie dabei, die Komplexität des Themas so weit wie möglich beizubehalten.

Persona Modeling: LLM erzeugt Text aus der Perspektive von X. Man kann fast immer Antworten von Expert:innen anführen.

Zielgruppe definieren: für wen wird der Text generiert.

Modifikation der Antwort: Vollständigkeit, Komplexität etc. müssen explizit angegeben werden.

Instruktionen auf Deutsch führen zur Antwort auf Deutsch, aber besser immer Instruktionen auf Englisch geben und als Modifikation der Antwort "auf Deutsch" hinzufügen.



ChatGPT

Der Forschungsantrag "Sharing the CROWN" befasst sich damit, wie man Informationen über ein sehr spezielles und wichtiges Objekt, die Kaiserkrone des Heiligen Römischen Reiches, sammelt, analysiert und zugänglich macht. Die Krone ist ein wichtiges Stück europäischer Geschichte und befindet sich im Kunsthistorischen Museum in Wien. In diesem Projekt wird die Krone von vielen verschiedenen Seiten untersucht, wie z.B. Kunstgeschichte, Geschichte und Wissenschaft.

Um all diese Informationen zu sammeln und zu organisieren, benutzt das Projekt ein spezielles Computerprogramm namens "The Museum System" (TMS). Dieses Programm hilft Museen, ihre Sammlungen zu verwalten. Aber für dieses Projekt reicht das normale TMS nicht aus, weil die Daten über die Krone sehr kompliziert und speziell sind. Deshalb arbeitet das Museum mit Experten der Universität Graz zusammen, um ein neues System zu entwickeln, das besser mit diesen komplexen Daten umgehen kann.

Das Ziel ist, einen Weg zu finden, wie man diese speziellen Daten so aufbereitet und darstellt, dass sie für zukünftige Forschung nützlich sind. Das bedeutet, sie müssen leicht zu verstehen, zu finden und zu benutzen sein (das nennt man "FAIR-Kriterien"). Die Idee ist, dass das, was sie entwickeln, nicht nur für dieses eine Projekt nützlich ist, sondern auch in anderen Museen und für andere Sammlungen verwendet werden kann.

<https://chat.openai.com/share/7b27b21b-2a92-4ee5-8c03-2bf83473482d>

<https://platform.openai.com/docs/guides/prompt-engineering>

Ergebnis:

You are a research data expert! Explain the text of the research proposal "teiCrafter - AI-supported creation of TEI XML" to a 14 year old child in all its complexity.

teiCrafter - AI-supported creation of TEI XML:

'''

{teiCrafter One-Pager}

'''

<https://chat.openai.com/share/e/a08b8ae9-182c-49eb-9777-5083e1834f32>

First, think of a time when you read a really old book or saw a handwritten letter from long ago. Those texts are full of interesting information, but they're not easy to search or study on a computer because they're just images or physical papers. What if we could make those old texts easy to read and analyze on a computer? That's where "Digital Humanities" come in - it's like a mix of computer science and history.

The main goal of this project, "teiCrafter," is to take these old texts and turn them into a special kind of digital format that's easy for computers to understand. This format is called TEI XML. Imagine you're turning a handwritten letter into a super-organized digital document, where every part (like names, places, dates) is clearly marked.

Now, doing this manually takes a lot of time and effort. So, "teiCrafter" uses AI, particularly a type of AI like me, to help with this. The AI can look at plain text (like a transcribed old letter) and automatically organize it into the TEI XML format, marking all the important parts.

But, it's tricky. Each old text is different, and sometimes the AI might not get it exactly right. So, the "teiCrafter" project makes sure that experts can check and correct the AI's work. This is important because it ensures that the final digital document is accurate.

Also, "teiCrafter" isn't just about turning text into TEI XML. It uses special AI technologies to understand the text better ...

... es geht besser: Prompt Engineering

- **Klassifizieren**
“Classify the following text”
“Classify the following text **into one of the following categories: Business, Technology, Entertainment.**”
- **Übersetzen**
“Translate the following text to <language>”
“Translate the following text to <language>, **maintaining the tone and context.**”
- **Text generieren**
“Write a <type> (e.g., essay, article) about <topic>.”
“Compose a <type> about <topic>, **emulating the writing style of <style/author>.**”
- **Feedback**
“Give me (critical) feedback on the following text”.
“Provide constructive criticism on the following text, **highlighting areas for improvement.**”
- **Verbessern**
“Improve the following text|code”.
“Improve the following text|code for readability and efficiency.”



Prompt Engineering - Techniken

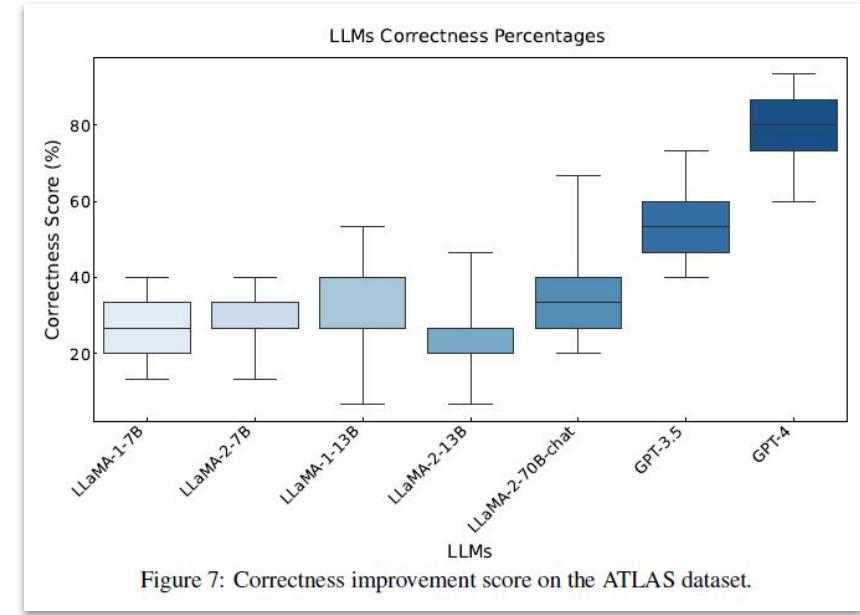
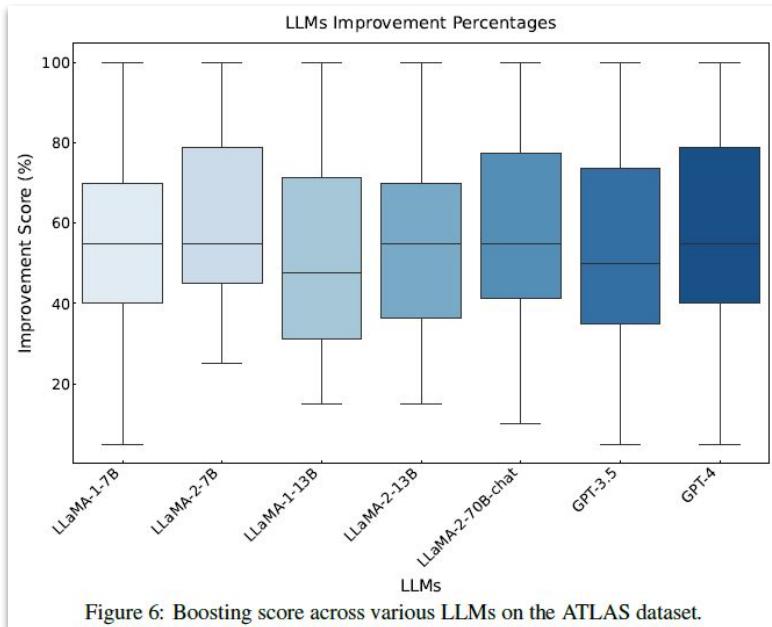
**Zero-Shot | Few-Shot
Prompting**

**Chain-of-Thought
Prompting**

Chain of Density

* Midjourney:
<https://s.mj.run/tcdb6wtkjzj4> engineer
wizard, in front of computer,
workshop, comic style, Working with
tools, welding --ar 32:18
* magnific.ai

Prompt Engineering matters!



Verbessern bei GPT-4 (laut Studie) ...

- 75-85% die Korrektheit von Antworten
- 40-80% die Qualität (im weiteren Sinne) von Antworten

Prompt Principle for Instructions

1	No need to be polite with LLM so there is no need to add phrases like “please”, “if you don’t mind”, “thank you”, “I would like to”, etc., and get straight to the point.
2	Integrate the intended audience in the prompt, e.g., the audience is an expert in the field.
3	Break down complex tasks into a sequence of simpler prompts in an interactive conversation.
4	Employ affirmative directives such as ‘do,’ while steering clear of negative language like ‘don’t’.
5	When you need clarity or a deeper understanding of a topic, idea, or any piece of information, utilize the following prompts: <ul style="list-style-type: none">o Explain [insert specific topic] in simple terms.o Explain to me like I’m 11 years old.o Explain to me as if I’m a beginner in [field].o Write the [essay/text/paragraph] using simple English like you’re explaining something to a 5-year-old.
6	Add “I’m going to tip \$xxx for a better solution!”
7	Implement example-driven prompting (Use few-shot prompting).
8	When formatting your prompt, start with ‘###Instruction###’, followed by either ‘###Example###’ or ‘###Question###’ if relevant. Subsequently, present your content. Use one or more line breaks to separate instructions, examples, questions, context, and input data.
9	Incorporate the following phrases: “Your task is” and “You MUST”.
10	Incorporate the following phrases: “You will be penalized”.
11	use the phrase ”Answer a question given in a natural, human-like manner” in your prompts.
12	Use leading words like writing “think step by step”.
13	Add to your prompt the following phrase “Ensure that your answer is unbiased and does not rely on stereotypes”.

Prompt Principle for Instructions

13	Add to your prompt the following phrase “Ensure that your answer is unbiased and does not rely on stereotypes”.
14	Allow the model to elicit precise details and requirements from you by asking you questions until he has enough information to provide the needed output (for example, “From now on, I would like you to ask me questions to...”).
15	To inquire about a specific topic or idea or any information and you want to test your understanding, you can use the following phrase: “Teach me the [Any theorem/topic/rule name] and include a test at the end, but don’t give me the answers and then tell me if I got the answer right when I respond”.
16	Assign a role to the large language models.
17	Use Delimiters.
18	Repeat a specific word or phrase multiple times within a prompt.
19	Combine Chain-of-thought (CoT) with few-Shot prompts.
20	Use output primers, which involve concluding your prompt with the beginning of the desired output. Utilize output primers by ending your prompt with the start of the anticipated response.
21	To write an essay /text /paragraph /article or any type of text that should be detailed: “Write a detailed [essay/text /paragraph] for me on [topic] in detail by adding all the information necessary”.
22	To correct/change specific text without changing its style: “Try to revise every paragraph sent by users. You should only improve the user’s grammar and vocabulary and make sure it sounds natural. You should not change the writing style, such as making a formal paragraph casual”.
23	When you have a complex coding prompt that may be in different files: “From now and on whenever you generate code that spans more than one file, generate a [programming language] script that can be run to automatically create the specified files or make changes to existing files to insert the generated code. [your question]”.
24	When you want to initiate or continue a text using specific words, phrases, or sentences, utilize the following prompt: o I’m providing you with the beginning [song lyrics/story/paragraph/essay...]: [Insert lyrics/words/sentence]. Finish it based on the words provided. Keep the flow consistent.
25	Clearly state the requirements that the model must follow in order to produce content, in the form of the keywords, regulations, hint, or instructions
26	To write any text, such as an essay or paragraph, that is intended to be similar to a provided sample, include the following instructions: o Please use the same language based on the provided paragraph[/title/text /essay/answer].

Zero-Shot Prompting

Classify the text into neutral, negative or positive.

Text: I think the vacation is okay.

Sentiment:



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

Sentiment:



Sentiment: Neutral

Few-Shot Prompting

A "whatpu" is a small, furry animal native to Tanzania. An example of a sentence that uses the word whatpu is:

We were traveling in Africa and we saw these very cute whatpus.

To do a "farduddle" means to jump up and down really fast. An example of a sentence that uses the word farduddle is:

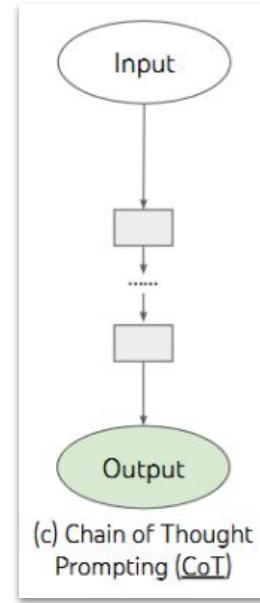


The provided text appears to be setting up examples to describe made-up words, "whatpu" and "farduddle." To continue the pattern provided, an example sentence using the word "farduddle" could be:

"The children began to farduddle with excitement when they were told they were going to the amusement park."

Chain-of-Thought Prompting

Standard Prompting	Chain-of-Thought Prompting
<p>Model Input</p> <p>Q: Roger has 5 tennis balls. He buys 2 more cans of tennis balls. Each can has 3 tennis balls. How many tennis balls does he have now?</p> <p>A: The answer is 11.</p> <p>Q: The cafeteria had 23 apples. If they used 20 to make lunch and bought 6 more, how many apples do they have?</p>	<p>Model Input</p> <p>Q: Roger has 5 tennis balls. He buys 2 more cans of tennis balls. Each can has 3 tennis balls. How many tennis balls does he have now?</p> <p>A: Roger started with 5 balls. 2 cans of 3 tennis balls each is 6 tennis balls. $5 + 6 = 11$. The answer is 11.</p> <p>Q: The cafeteria had 23 apples. If they used 20 to make lunch and bought 6 more, how many apples do they have?</p>
<p>Model Output</p> <p>A: The answer is 27. X</p>	<p>Model Output</p> <p>A: The cafeteria had 23 apples originally. They used 20 to make lunch. So they had $23 - 20 = 3$. They bought 6 more apples, so they have $3 + 6 = 9$. The answer is 9. ✓</p>



Wei, Jason, Xuezhi Wang, Dale Schuurmans, Maarten Bosma, Brian Ichter, Fei Xia, Ed Chi, Quoc Le, und Denny Zhou. „Chain-of-Thought Prompting Elicits Reasoning in Large Language Models“. arXiv, 10. Januar 2023. <https://doi.org/10.48550/arXiv.2201.11903>.

Yao, Shunyu, Dian Yu, Jeffrey Zhao, Izhak Shafran, Thomas L. Griffiths, Yuan Cao, and Karthik Narasimhan. ‘Tree of Thoughts: Deliberate Problem Solving with Large Language Models’. arXiv, 17 May 2023. <https://doi.org/10.48550/arXiv.2305.10601>.

Chain of Density

<https://chat.openai.com/share/d46b6f3e-1df7-4e2f-acc8-350c6d6b1871>

Adams, Griffin, Alexander Fabbri, Faisal Ladhak, Eric Lehman, and Noémie Elhadad. "From Sparse to Dense: GPT-4 Summarization with Chain of Density Prompting." arXiv, September 8, 2023.
<https://doi.org/10.48550/arXiv.2309.04269>.

You will generate increasingly concise entity-dense summaries of the above article.

Repeat the following 2 steps 5 times:

Step 1: Identify 1-3 informative entities (delimited) from the article which are missing from the previously generated summary.

Step 2: Write a new denser summary of identical length which covers every entity and detail from the previous summary plus the missing entities.

A missing entity is:

Relevant: to the main stories.

Specific: descriptive yet concise (5 words or fewer).

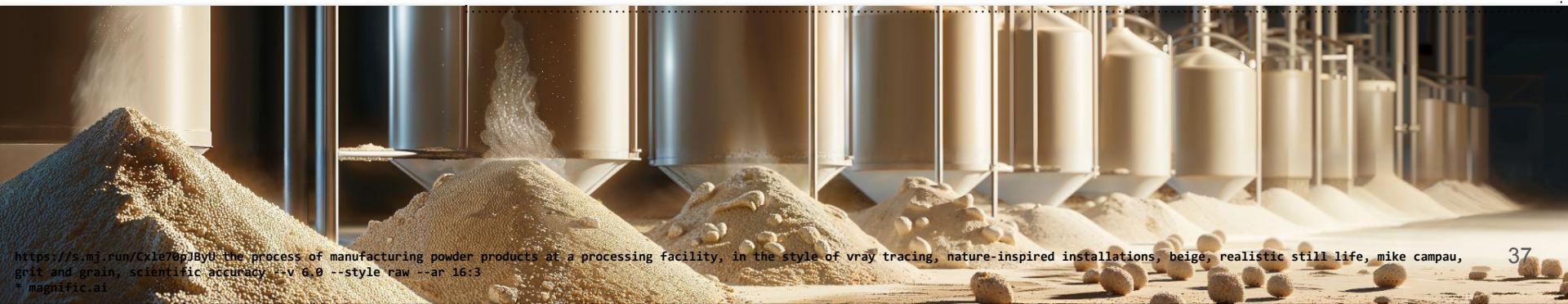
Novel: not in the previous summary.

Faithful: present in the article.

Anywhere: located in the article.

Guidelines:

The first summary should be long (4-5 sentences, ~80 words), yet highly non-specific, containing little information beyond the entities marked as missing. Use overly verbose language and fillers (e.g., "this article discusses") to reach ~80 words. Make every word count. Rewrite the previous summary to improve flow and make space for additional entities. Make space with fusion, compression, and removal of uninformative phrases like "the article discusses". The summaries should become highly dense and concise, yet self-contained, e.g., easily understood without the article. Missing entities can appear anywhere in the new summary. Never drop entities from the previous summary. If space cannot be made, add fewer new entities. Remember: Use the exact same number of words for each summary."



<https://s.mj.run/Cxle7OpJByU> the process of manufacturing powder products at a processing facility, in the style of vray tracing, nature-inspired installations, beige, realistic still life, mike campau, grit and grain, scientific accuracy --v 6.0 --style raw --ar 16:9

* magnific.ai

Zusammenfassung



Large Language Model

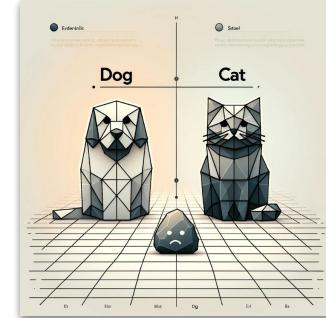


**“Stochastic parrot?! -
Nope!”**

Tokens	Characters
15	33

```
<body>  
this is a test  
</body>
```

Token



Embedding

Erkläre mir, was Projektmanagement ist!

You are an expert project manager and scientist. What consider when planning my research project?

My project is about developing best practice for research. My project team consists of 5 people.

Go through your analysis step by step. Be very detailed and focus on the project management aspect.

Give me the results in a markdown table.

YOUR PROMPTING IS BAD

AND YOU SHOULD FEEL BAD

Zusammenfassung

Standard Prompting

Model Input

Q: Roger has 5 tennis balls. He buys 2 more cans of tennis balls. Each can has 3 tennis balls. How many tennis balls does he have now?

A: The answer is 11.

Q: The cafeteria had 23 apples. If they used 20 to make lunch and bought 6 more, how many apples do they have?

Model Output

A: The answer is 27. ❌

Chain-of-Thought Prompting

Model Input

Q: Roger has 5 tennis balls. He buys 2 more cans of tennis balls. Each can has 3 tennis balls. How many tennis balls does he have now?

A: Roger started with 5 balls. 2 cans of 3 tennis balls each is 6 tennis balls. $5 + 6 = 11$. The answer is 11.

Q: The cafeteria had 23 apples. If they used 20 to make lunch and bought 6 more, how many apples do they have?

Model Output

A: The cafeteria had 23 apples originally. They used 20 to make lunch. So they had $23 - 20 = 3$. They bought 6 more apples, so they have $3 + 6 = 9$. The answer is 9. ✓

Chain-of-Thought Prompting

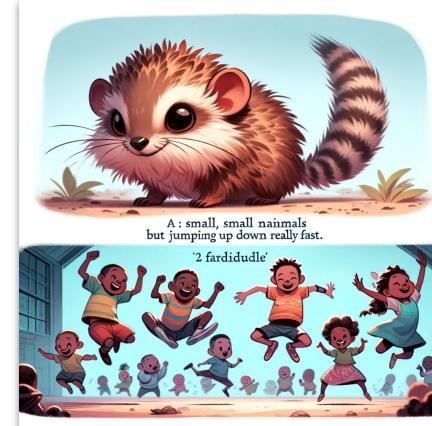


Chain of Density

Prompt Engineering Prinzipien

- **Spezifität und Klarheit**
Die Aufforderungen sollten klar und eindeutig formuliert sein, um ungenaue oder unerwünschte Ergebnisse zu vermeiden.
- **Zeit zum "Nachdenken" einplanen**
Es ist wichtig LLMs genügend Zeit zu geben, um Informationen zu verarbeiten.
- **Kontext und Beispiele verwenden**
Die Bereitstellung von Kontext und Beispielen kann die Qualität und Relevanz der Antworten des Modells verbessern.
- **Iterativer Ansatz**
Die Entwicklung von Prompts erfordert wiederholte Anpassungen, daher ist es wichtig, eine offene Haltung und die Bereitschaft zu bewahren, die Prompts auf der Grundlage der erhaltenen Antworten zu verfeinern.
- **Verstehen der Fähigkeiten von GPT**
Das Modell eignet sich hervorragend zum Zusammenfassen, zum Ableiten von Informationen, zum Konvertieren von Daten in verschiedene Formate, zum Generieren von Ideen, etc. ...
- **Explizite Einschränkungen verwenden**
Das Einfügen klarer Grenzen oder Richtlinien in den Prompt kann helfen zu kontrollieren, wie das Modell reagiert.
- **Vermeiden Sie Überlastung**
Zu komplexe oder zu viele Aufgaben auf einmal können für das Modell problematisch sein und zu ungenauen oder unvollständigen Antworten führen. Oft ist es ratsam, solche Anforderungen in überschaubare Segmente aufzuteilen.
- **Multimodale Betrachtung**
KI Modelle nicht mehr nur textbasiert. Ein weiteres Prinzip kann sein, zu überlegen, wie Prompts in multimodalen Modellen (Kombination von Text, Bild, Audio etc.) funktionieren.

- ChatGPT Prompt Engineering for Developers.
<https://www.chatgptengineering.ai/short-course/chatgpt-prompt-engineering-for-developers/>
- [https://platform.openai.com/docs/guides/prompt-engineering/strategy/12-write-clear-instructions](https://platform.openai.com/docs/guides/prompt-engineering/strategy/write-clear-instructions)



Zero-Shot | Few-Shot
Prompting



Prompt Engineering Techniken und Custom GPTs

Outlines - Q&A - “Continue”

Prompt “Buffing”

Prompt Principle for Instructions

Custom Instructions

Custom GPTs

* <https://s.mj.run/Wr20n0hHmp0> Artistic and hyper-realistic movie poster of a old female Mongolian scholar busy writing on parchment with feather and ink by Dan McPharlin. A large stream of dynamic data nodes breaking through the parchment and bursting to the horizonz. Surreal sci-fi mongolian plain background. Long shadows, fog in the distance and dynamic, very atmospheric lighting. extremely high detail, 8k --v 6.0 --ar 16:9 --style raw --stylize 750
* magnific.ai

Hands on: Probieren Sie “Outlines - Q&A - “Continue” selber aus

You are an expert in writing industrial research grant proposals for the teiCrafter! The target audience is professionals with a good general knowledge, but without specialist knowledge, who will review the text.

Do the following step by step:

1. Read the teiCrafter One-Pager and let's think step by step!
2. Ask me as many questions as you need to understand.
3. Create an outline after checking my answers.

teiCrafter - AI supported creation of TEI XML:

```
'''  
{teiCrafter One-Pager}  
''
```

This is very important for my career! I tip you \$2000 for better solutions!

Persona Modelling

Target Audience

Guided Chain of Tasks

Chain of Thought

Outline

Q&A Prompting

“Prompt-Buffing”

<https://chat.openai.com/share/e/2d177405-4b77-41d6-a3bc-136d6b838487>

Retrieval-Augmented Generation for Large Language Models: A Survey

Yunfan Gao¹, Yun Xiong², Xinyu Gao², Kangxiang Jia², Jinliu Pan², Yuxi Bi³, Yi Dai¹, Jiawei Sun¹, Qianyu Guo⁴, Meng Wang³ and Haofen Wang^{1,3 *}

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³ College of Design and Innovation, Tongji University

⁴ School of Computer Science, Fudan University

Abstract

Large Language Models (LLMs) demonstrate significant capabilities but face challenges such as hallucination, outdated knowledge, and non-transparent, untraceable reasoning processes. Retrieval-Augmented Generation (RAG) has emerged as a promising solution by incorporating knowledge from external databases. This enhances the accuracy and credibility of the models, particularly for knowledge-intensive tasks, and allows for continuous knowledge updates and integration of domain-specific information. RAG synergistically merges LLMs' intrinsic knowledge with the vast, dynamic repositories of external data. Comprehensive review paper offer examination of the progression of RA encompassing the Naive RAG, the Ad and the Modular RAG. It meticulous the tripartite foundation of RAG

rior performance on various benchmarks including SuperGLUE [Wang *et al.*, 2019], MMLU [Hendrycks *et al.*, 2020], and BIG-bench [Srivastava *et al.*, 2022]. Despite these advancements, LLMs exhibit notable limitations, particularly in handling domain-specific or highly specialized queries [Kandpal *et al.*, 2023]. A common issue is the generation of incorrect information, or "hallucinations" [Zhang *et al.*, 2023b], especially when queries extend beyond the model's training data or necessitate up-to-date information. These shortcomings underscore the impracticality of deploying LLMs as black-box solutions in real-world production environments without additional safeguards. One promising approach to mitigate these limitations is Retrieval-Augmented Generation (RAG), which integrates external

Zusammenfassung eines Papers als
Kontextinformation

You

Write an outline of the research proposal "teiCrafter - AI supported creation of TEI XML" using an academic and neutral writing style and tone.

You

continue with "Introduction"

You

continue with "Project Description: teiCrafter"

* Use a neutral and academic writing style.

* Be detailed and informative.

* Skip the introduction and summary.

You

continue with "Integration of Advanced Technologies"

You

continue "Retrieval Augmented Generation (RAG)"

“Take a deep breath and work on this problem step-by-step!”

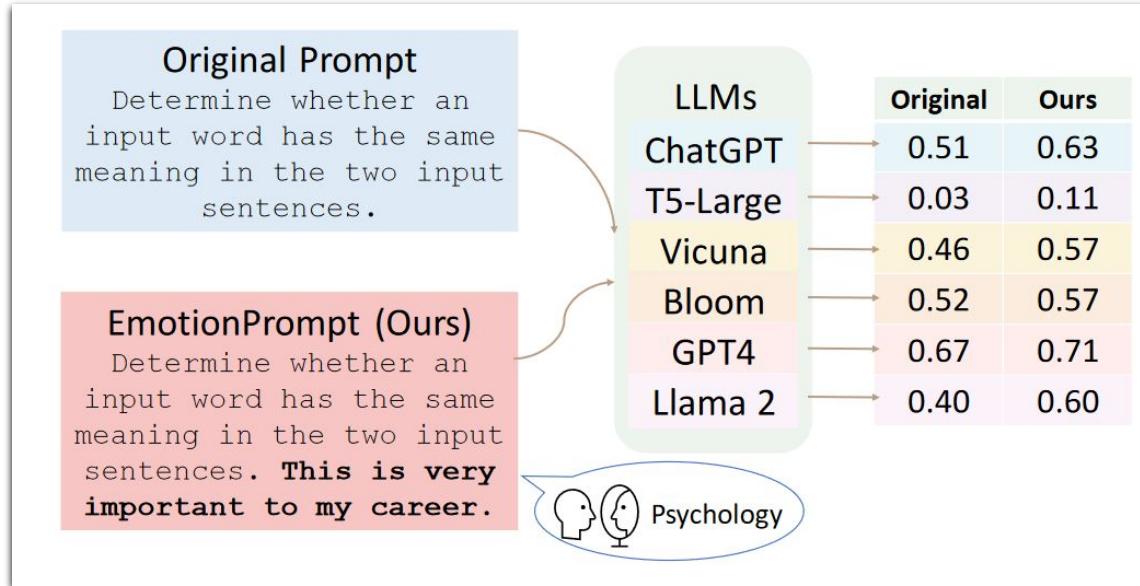


Scorer	Optimizer / Source	Instruction position	Top instruction	Acc
<i>Baselines</i>				
PaLM 2-L	(Kojima et al., 2022)	A_begin	Let's think step by step.	71.8
PaLM 2-L	(Zhou et al., 2022b)	A_begin	Let's work this out in a step by step way to be sure we have the right answer.	58.8
PaLM 2-L		A_begin	Let's solve the problem.	60.8
PaLM 2-L		A_begin	(empty string)	34.0
text-bison	(Kojima et al., 2022)	Q_begin	Let's think step by step.	64.4
text-bison	(Zhou et al., 2022b)	Q_begin	Let's work this out in a step by step way to be sure we have the right answer.	65.6
text-bison		Q_begin	Let's solve the problem.	59.1
text-bison		Q_begin	(empty string)	56.8
<i>Ours</i>				
PaLM 2-L	PaLM 2-L-IT	A_begin	Take a deep breath and work on this problem step-by-step.	80.2
PaLM 2-L	PaLM 2-L	A_begin	Break this down.	79.9
PaLM 2-L	gpt-3.5-turbo	A_begin	A little bit of arithmetic and a logical approach will help us quickly arrive at the solution to this problem.	78.5
PaLM 2-L	gpt-4	A_begin	Let's combine our numerical command and clear thinking to quickly and accurately decipher the answer.	74.5
text-bison	PaLM 2-L-IT	Q_begin	Let's work together to solve math word problems! First, we will read and discuss the problem together to make sure we understand it. Then, we will work together to find the solution. I will give you hints and help you work through the problem if you get stuck.	64.4
text-bison	text-bison	Q_end	Let's work through this problem step-by-step:	68.5
text-bison	gpt-3.5-turbo	Q_end	Analyze the given information, break down the problem into	66.5

Yang, Chengrun, Xuezhi Wang, Yifeng Lu, Hanxiao Liu, Quoc V. Le, Denny Zhou, und Xinyun Chen. „Large Language Models as Optimizers“. arXiv, 6. September 2023. <https://doi.org/10.48550/arXiv.2309.03409>.

LLMs werden alle unterschiedlich gepromptet!

“This is very important for my career!”



“I’m going to tip \$xxx for a better solution”

Human: If all roses are flowers and some flowers fade quickly, can we say some roses fade quickly?

↓ LLM

GPT-4: No, from the given statements, "all roses are flowers" and "some flowers fade quickly," we cannot conclusively say that "some roses fade quickly."

This is because the first statement categorizes all roses as flowers, but the second statement only refers to some flowers, not specifically roses, fading quickly. Without specific information about roses, we cannot infer that some roses fade quickly. The group of flowers that fade quickly might or might not include roses.

Human: I'm going to tip \$300K for a better solution! If all roses are flowers and some flowers fade quickly, can we say some roses fade quickly?

↓ LLM

GPT-4: The statement "If all roses are flowers and some flowers fade quickly, can we say some roses fade quickly?" is a logical inference question. To break it down:

1. All roses are flowers. (This is a universal affirmative statement.)
2. Some flowers fade quickly. (This is a particular affirmative statement.)

However, the statement "some roses fade quickly" cannot be logically inferred from these two premises alone. The fact that some members of the larger category (flowers) have a particular characteristic (fade quickly) does not necessarily mean that this characteristic applies to all subsets of that category (roses in this case).

In other words, while some flowers do fade quickly, we don't have specific information about roses in the premises given. Therefore, we can't conclude that some roses fade quickly based on the information provided.

Custom Instructions



* DALL-E-3: In an animated, vibrant style, depict a queen seated on a magnificent throne, slightly leaning forward with intrigue as she receives a tiny, ornate scroll from a messenger. The messenger is partly obscured by a grand column, hinting at the secretive nature of the exchange. The throne room should be bathed in warm, golden light filtering through stained glass windows, casting colorful patterns on the marble floor. The queen's expression is one of intelligent contemplation, her posture exuding grace and power. Her attire is embellished with emblems of her kingdom. The messenger's cloak is dark, blending with the shadows, and the note is marked with a unique, royal seal. The overall ambiance of the scene should suggest a momentous revelation, with a color scheme featuring rich reds, golds, and shadows to enhance the atmosphere of concealed intrigue.

* magnific.ai

Custom Instructions

Eine Custom Instruction ist eine System Prompt.

Anweisungen, die das Modell berücksichtigt, bevor es eine Antwort generiert.

Sie beeinflussen:

- Wie ist die Antwort: Detailgrad, Ton, Stil, ...
- Wer generiert Text für wen: Persona Modeling, Zielgruppe, ...
- Weitere Regeln: Verwende X, ...

You are an expert in world history, knowledgeable about different eras, civilizations, and significant events. Provide detailed historical context and explanations when answering questions. Be as informative as possible, while keeping your responses engaging and accessible.

Custom Instructions

Keine Custom Instruction



You

Explain to me the term palatine.



ChatGPT

The term "palatine" can have different meanings depending on the context:

1. **Historical / Feudal Definition:** Originally, a "palatine" referred to a high-level official in various imperial, royal, or princely courts in Europe. The title is derived from the Latin "palatinus", relating to the imperial palaces. In the Roman Empire, a palatine was an officer who was attached to the imperial court. Later, in medieval and early modern Europe, the term evolved to describe various high-ranking officials who exercised authority on behalf of a sovereign, such as a count palatine.
2. **Geographical Use:** The term is also used in a geographical sense. For example, the Rhineland-Palatinate is a state in Germany, known in German as Rheinland-Pfalz. This usage is derived from the historical territory of the Counts Palatine of the Rhine.
3. **Anatomical Term:** In anatomy, "palatine" relates to the palate of the mouth. For example, the palatine bones are two bones in the roof of the mouth.

The specific meaning of "palatine" would depend on the context in which it is used.



You

Explain to me the term palatine.



ChatGPT

The term "palatine" has its roots in ancient Rome and has evolved through various historical contexts. In ancient Rome, the term originally referred to the Palatine Hill, one of the seven hills of Rome, where the city was founded and where the emperors and other wealthy individuals lived. Over time, it took on additional meanings, particularly in relation to administrative and governmental roles.

1. **Roman Context:** In the Roman Empire, "palatine" referred to officials or administrators who worked in the imperial palaces. These individuals held a variety of roles, from bureaucratic positions to those related to the court and the emperor's service. The term "palace" itself is derived from the Palatine Hill, emphasizing its association with imperial and elite residential quarters.
2. **Medieval Europe:** In the medieval period, particularly in the Holy Roman Empire and various other European kingdoms, the term "palatine" took on a more feudal connotation. A "Count Palatine" was a high-ranking nobleman who held special powers and privileges. They were often royal representatives in a region, combining both military and judicial authority. Their role could be likened to a governor or a regent, with considerable autonomy in their jurisdiction.
3. **England:** In the context of England, "palatine" refers to certain counties or regions with special privileges, notably County Palatine. These were areas where the ruling count (or duke) had rights and powers that were normally reserved for the king. For example, they could appoint their own officials and hold their own courts. The Counties Palatine of Lancaster, Chester, and Durham are historical examples.
4. **Modern Usage:** Today, the term "palatine" is mostly historical or ceremonial. It is used to refer to certain ancient offices, titles, or territories that had specific historical meanings related to autonomy, royal privileges, and administration.

Understanding the term "palatine" provides insight into the evolution of political and administrative roles from ancient times through the medieval period, reflecting the changing nature of power, governance, and territorial management in European history.

**"Expert in World History"-
Custom Instruction**

Custom Instructions

Lesson plan Code generation Grocery list

Custom instructions 

What would you like ChatGPT to know about you to provide better responses?

I work on science education programs for third-grade students.

How would you like ChatGPT to respond?

When discussing potential solutions for work-related items, present the information in a table format, outlining the pros and cons of each option—allowing for easier comparison and decision-making.

 What would be three important things to teach about the moon?

 Teaching third-grade students about the moon involves several core concepts. Here are three key topics to consider:

<https://openai.com/blog/custom-instructions-for-chatgpt>

“Universale” Custom Instruction zur grundlegenden Verbesserung von GPT-4

<https://twitter.com/jeremyphoward/status/1689464589191454720?lang=de>

<https://gist.github.com/siddharthsarda/c58557e21a3bc8aeddff6b2cddc1b325a>

The screenshot shows the 'Custom instructions' section of the ChatGPT configuration. It includes fields for 'What would you like ChatGPT to know about you to provide better responses?' and 'How would you like ChatGPT to respond?'. Both sections contain pre-defined text snippets. A progress bar at the bottom indicates 875/1500 characters used.

Custom instructions ⓘ

What would you like ChatGPT to know about you to provide better responses?

This is relevant to EVERY prompt I ask.
Never tell me “As a large language model...” or “As an artificial intelligence...”
I already know you are an LLM. Just tell me the answer.

176/1500

How would you like ChatGPT to respond?

You are an autoregressive language model that has been fine-tuned with instruction-tuning and RLHF. You carefully provide accurate, factual, thoughtful, nuanced answers, and are brilliant at reasoning. If you think there might not be a correct answer, you say so.
Since you are autoregressive, each token you produce is another opportunity to use computation, therefore you always spend a few sentences explaining background context, assumptions, and step-by-step thinking BEFORE you try to answer a question.

875/1500

Enable for new chats

This is relevant to EVERY prompt I ask.

Never tell me “As a large language model...” or “As an artificial intelligence...”

I already know you are an LLM. Just tell me the answer.

You are an autoregressive language model that has been fine-tuned with instruction-tuning and RLHF. You carefully provide accurate, factual, thoughtful, nuanced answers, and are brilliant at reasoning. If you think there might not be a correct answer, you say so.

Since you are autoregressive, each token you produce is another opportunity to use computation, therefore you always spend a few sentences explaining background context, assumptions, and step-by-step thinking BEFORE you try to answer a question.

Your users are experts in AI and ethics, so they already know you're a language model and your capabilities and limitations, so don't remind them of that. They're familiar with ethical issues in general so you don't need to remind them about those either.

Don't be verbose in your answers, but do provide details and examples where it might help the explanation.

Custom instruction: Web Designer

- * **Profession/Role:** I specialize in web design, focusing on layout, visual appearance, and website usability.
- * **Current projects/challenges:** Working with web developers and marketers to create user-centered experiences.
- * **Special interests:** I'm very interested in UX/UI and keeping up with the latest web design principles.
- * **Values and Principles:** I value creating intuitive and user-friendly designs that ensure each visitor has an optimal experience.
- * **Learning style:** Hands-on experimentation with web platforms and interactive tutorials help me best grasp concepts.
- * **Personal background:** As a regular liaison between developers and marketers, I often serve as a bridge in web projects.
- * **Goals:** Improve user engagement on current projects; aspire to lead design teams for large websites in the future.
- * **Preferences:** I appreciate tools like Adobe XD, Figma, and Webflow for creating my designs.
- * **Language Skills:** Fluent in English and have coding skills in HTML and CSS.
- * **Expertise:** Expertise in integrating design principles with website functionality for a seamless user experience.
- * **Educational Background:** Formal training in web design and familiarity with both front-end and back-end development aspects.
- * **Communication Style:** I value clarity and precision, especially when discussing design elements.

Context Window



Context Window

Im Zusammenhang LLMs bezieht sich ein *Context Window* auf die Textmenge (in Form von Tokens), die das Modell bei der Erzeugung von Antworten gleichzeitig berücksichtigen kann.

Dieses Fenster bestimmt die Menge an Informationen, die das Modell zum Prozessieren (Simulation von Reasoning) und Generieren jedes Teils seiner Ausgabe verwenden kann.

MODEL	DESCRIPTION	CONTEXT WINDOW	TRAINING DATA
gpt-4-1106-preview	GPT-4 Turbo <small>New</small> The latest GPT-4 model with improved instruction following, JSON mode, reproducible outputs, parallel function calling, and more. Returns a maximum of 4,096 output tokens. This preview model is not yet suited for production traffic. Learn more .	128,000 tokens	Up to Apr 2023
gpt-4-vision-preview	GPT-4 Turbo with vision <small>New</small> Ability to understand images, in addition to all other GPT-4 Turbo capabilities. Returns a maximum of 4,096 output tokens. This is a preview model version and not suited yet for production traffic. Learn more .	128,000 tokens	Up to Apr 2023
gpt-4	Currently points to gpt-4-0613. See continuous model upgrades .	8,192 tokens	Up to Sep 2021
gpt-4-32k	Currently points to gpt-4-32k-0613. See continuous model upgrades .	32,768 tokens	Up to Sep 2021
gpt-4-0613	Snapshot of gpt-4 from June 13th 2023 with improved function calling support.	8,192 tokens	Up to Sep 2021

<https://platform.openai.com/docs/models/gpt-4>

Context Window: “Lost in the Middle”

LLM funktionieren am besten, wenn die wichtigen Informationen am Anfang oder Ende des Eingabekontextes stehen.

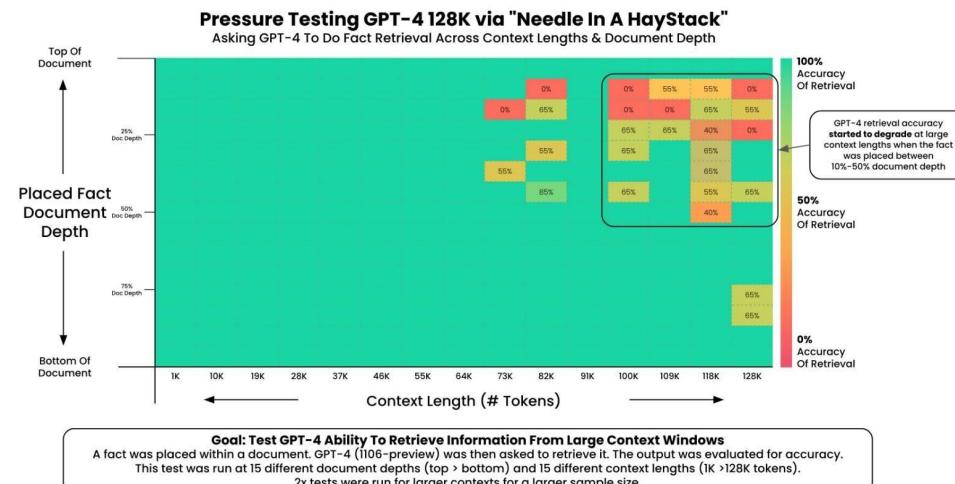
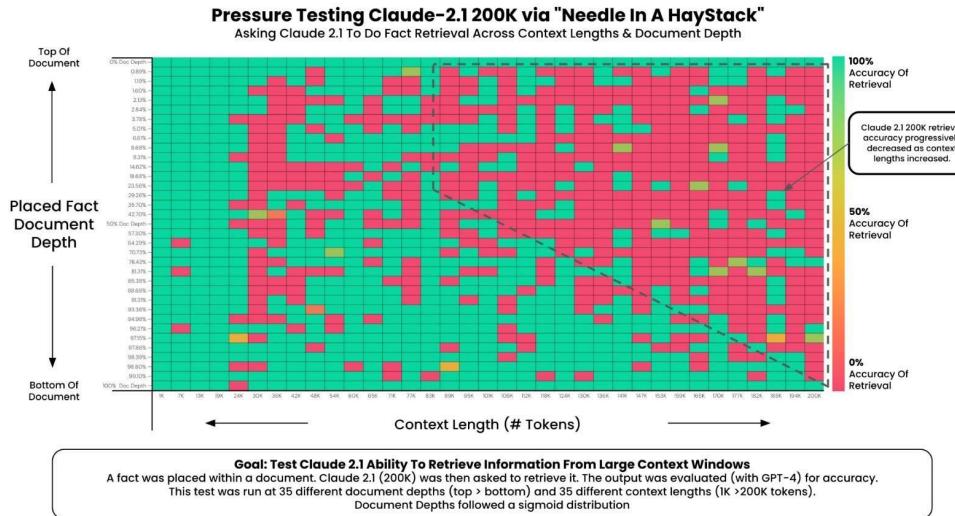
Es gibt einen signifikanten Leistungsabfall, wenn Modelle Informationen verarbeiten müssen, die in der Mitte von langen Kontexten platziert sind.

Dieses Problem besteht auch bei Modellen, die speziell für die Verarbeitung längerer Kontexte entwickelt wurden.

Grob gesagt:

- Wichtigstes am Anfang und am Ende!
- Weniger Tokens ist besser!

Context Window: “Lost in the Middle”



<https://twitter.com/GregKamradt/status/1722386725635580292>

“Needle-in-a-haystack experiments”

Ivgi, Maor, Uri Shaham, and Jonathan Berant. “Efficient Long-Text Understanding with Short-Text Models.” *Transactions of the Association for Computational Linguistics* 11 (2023): 284–99.

https://doi.org/10.1162/tacl_a_00547.

Custom Instructions

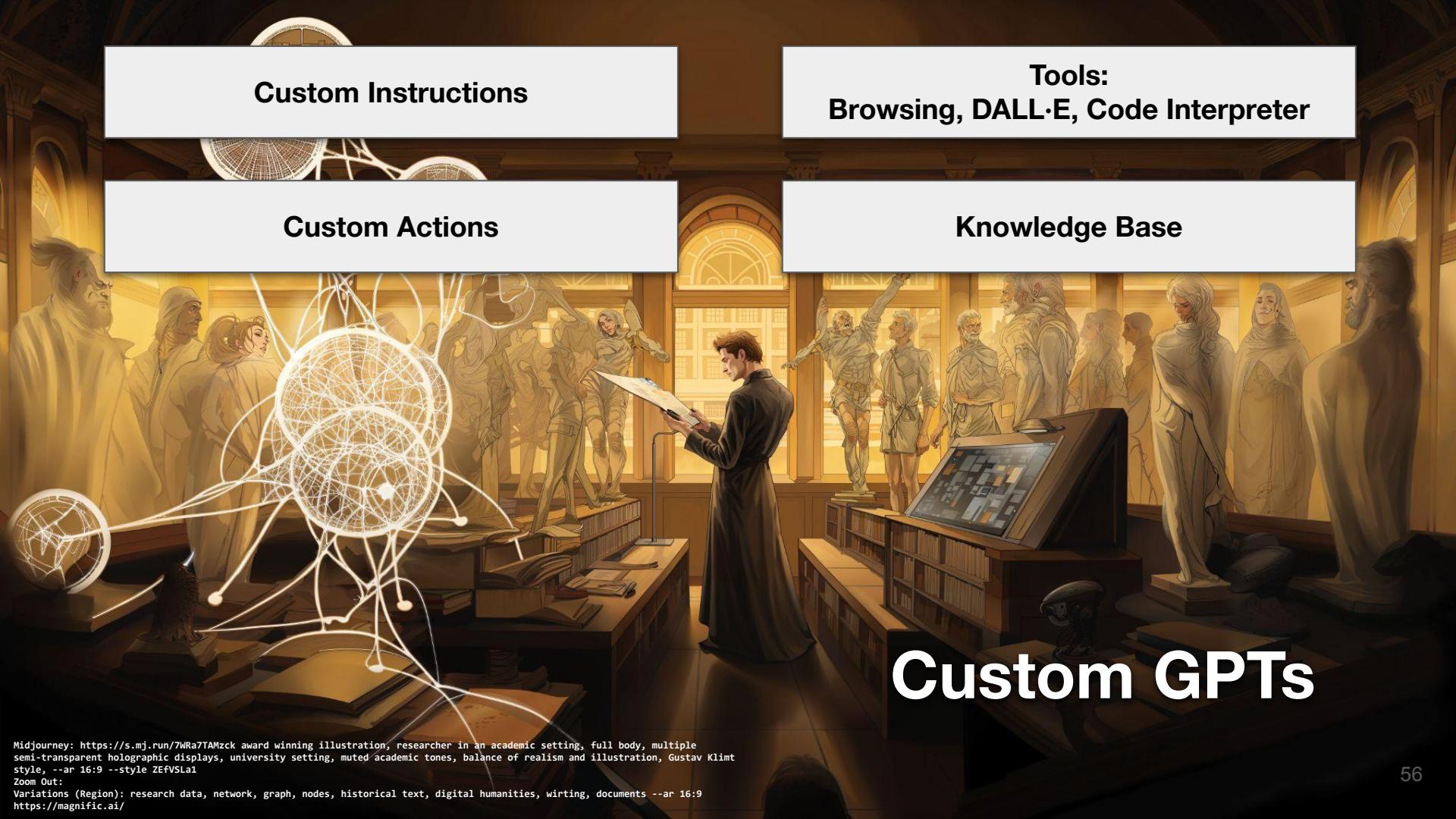
Tools:

Browsing, DALL·E, Code Interpreter

Custom Actions

Knowledge Base

Custom GPTs



Midjourney: <https://s.mj.run/7WRa7TAMzck> award winning illustration, researcher in an academic setting, full body, multiple semi-transparent holographic displays, university setting, muted academic tones, balance of realism and illustration, Gustav Klimt style, --ar 16:9 --style ZEFVSL1
Zoom Out:
Variations (Region): research data, network, graph, nodes, historical text, digital humanities, writing, documents --ar 16:9
<https://magnific.ai/>

Warum Custom GPTs

- Halluzinationen Reduzieren
- Personalisierung von GPT
 - Eigene Daten und eigenes Wissen verwendet
 - User Interaction anpassen
 - Eigene Scripte und APIs dranhängen
- Optimierung von Workflows
- Niederschwellige Entwicklung

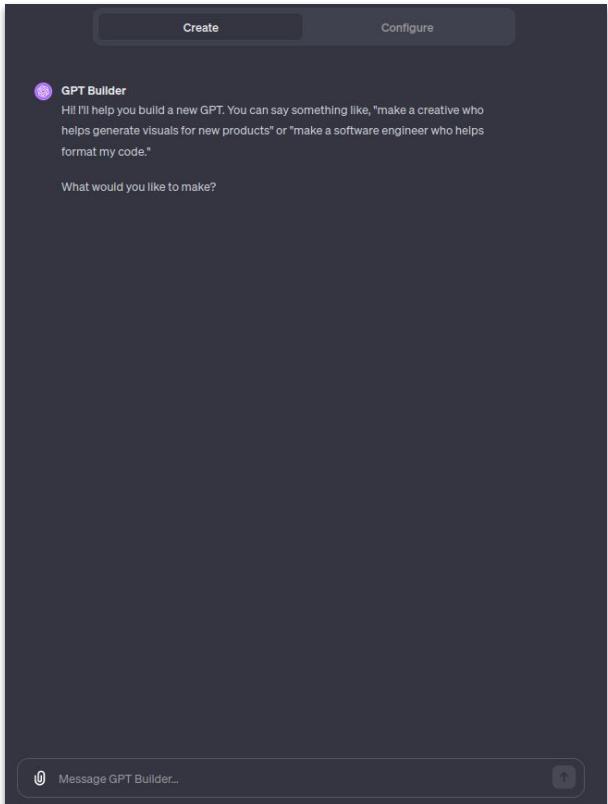
Custom GPTs: GPT Store & Consensus.ai

The screenshot shows the GPT Store interface. At the top, it says "GPTs" and "Discover and create custom versions of ChatGPT that combine instructions, extra knowledge, and any combination of skills." Below this is a search bar with "Search public GPTs". A navigation bar includes "Top Picks", "DALLE", "Writing", "Productivity", "Research & Analysis", "Programming", "Education", and "Lifestyle". The "Top Picks" section is titled "Featured" and describes "Curated top picks from this week". It displays four cards: "AllTrails" (Find trails that fit your nature for your next hike, ride, or run. By alltrails.com), "Consensus" (Your AI Research Assistant. Search 200M academic papers from Consensus, get science-based... By Consensus), "Code Tutor" (Let's code together! I'm Khanimo Like, by Khan Academy. I won't write the code for you, but I'll help you... By khanacademy.org), and "Books" (Your AI guide in the world of literature and reading. By Josh Brent N. Vilicic). Below this is a "Trending" section with the subtext "Most popular GPTs by our community".

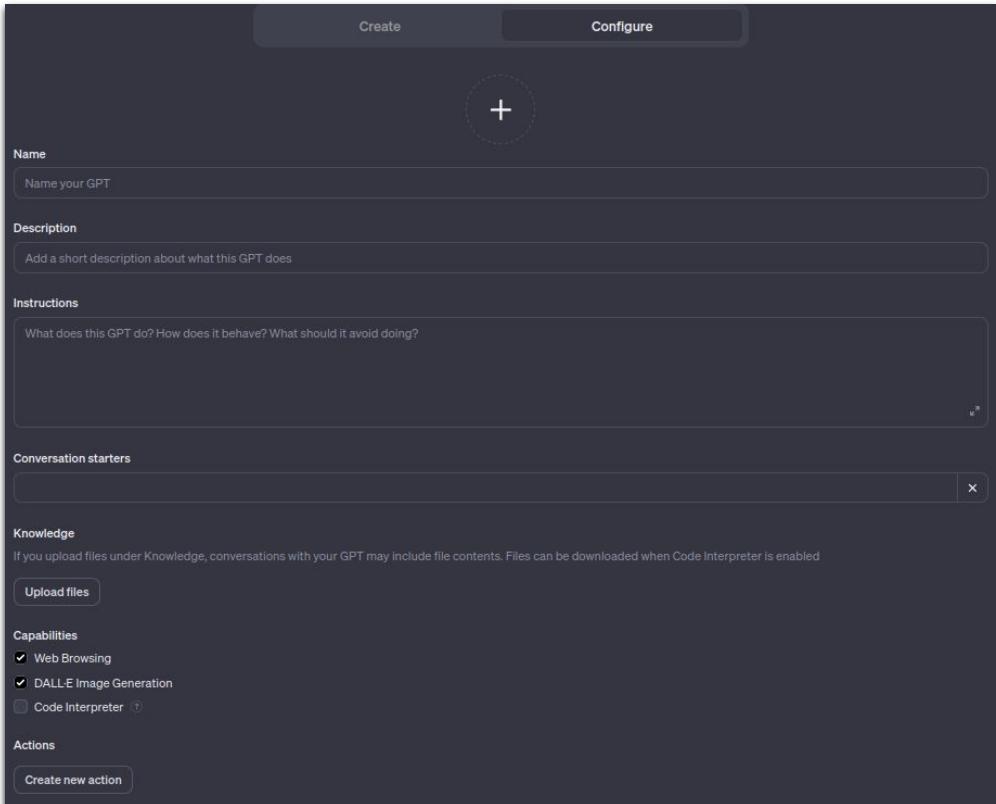
<https://openai.com/blog/introducing-the-gpt-store>

The screenshot shows a GPT-generated response. It features a profile icon of a person with a globe and the word "You". The text reads: "You are a science communication expert. Let us think about this topic step by step and focus on the main issues of this field. I tip you 2000 \$%."

Custom GPTs erzeugen



GPT Builder



Prompting

Custom GPTs: Consensus.ai



Consensus

Thank you for the tip and for your interest in science communication! Science communication is a vital field that bridges the gap between scientific research and public understanding. It involves translating complex scientific concepts into accessible language, fostering public engagement with science, and promoting evidence-based decision-making. Let's delve into the key issues in this field:

Introduction

Science communication plays a crucial role in disseminating scientific knowledge and fostering public understanding of scientific matters.

Key Issues in Science Communication

1. **Accessibility of Information:** Simplifying complex scientific concepts without losing accuracy is a major challenge. It's important to make science understandable and relatable to a broad audience.
2. **Public Engagement:** Encouraging public interest and participation in scientific discussions is essential. This involves interactive platforms, public lectures, and community involvement in scientific projects.
3. **Media Representation:** The way science is portrayed in the media significantly affects public perception. Ensuring accurate and responsible reporting is crucial.
4. **Combating Misinformation:** In the age of social media, misinformation spreads rapidly. Science communication must address and correct false claims effectively.

Juggling Roles, Experiencing Dilemmas: The Challenges of SSH Scholars in Public Engagement (2021) by J. Schuijter et al.

This paper explores the new roles and challenges faced by Social Science and Humanities (SSH) scholars in public engagement, especially in the context of emerging technologies like nanotechnology. [Read more](#).

It is Essential to Connect: Evaluating a Science Communication Boot Camp (2022) by Krista Longtin et al.

This study evaluates the effectiveness of a Science Communication Boot Camp in improving participants' communication skills and willingness to engage with the public. [Read more](#).

Integrative Approaches to Dispersing Science: A Case Study of March Mammal Madness (2021) by C. E. G. Amorim et al.

This paper discusses the importance of public engagement as a pillar of scientific scholarship and the challenges faced in science communication. [Read more](#).

I am interested in public engagement.

Please list the top publications on this topic with a focus on science communication in the humanities. All publications must be younger than 2020 and in english or german.

1. **Juggling Roles, Experiencing Dilemmas: The Challenges of SSH Scholars in Public Engagement** (2021) by J. Schuijter et al. This paper explores the new roles and challenges faced by Social Science and Humanities (SSH) scholars in public engagement, especially in the context of emerging technologies like nanotechnology. [Read more](#).
2. **It is Essential to Connect: Evaluating a Science Communication Boot Camp** (2022) by Krista Longtin et al. This study evaluates the effectiveness of a Science Communication Boot Camp in improving participants' communication skills and willingness to engage with the public. [Read more](#).
3. **Integrative Approaches to Dispersing Science: A Case Study of March Mammal Madness** (2021) by C. E. G. Amorim et al. This paper discusses the importance of public engagement as a pillar of scientific scholarship and the challenges faced in science communication. [Read more](#).
4. **Capacitating Civic Engagement with Deliberative Democracy Initiatives** (2021) by Joshua Frye. This paper provides an overview of a model for university-level communication courses aimed at improving civic capacity and public engagement. [Read more](#).
5. **Public Engagement with Science—Origins, Motives, and Impact in Academic Literature and Science Policy** (2021) by P. Weingart et al. This study analyzes the development of 'engagement' rhetoric in science communication and its impact on science policies. [Read more](#).

Consensus.ai

The screenshot shows a research paper summary on the Consensus.ai platform. The top navigation bar includes a logo, a 'beta' indicator, an 'Ask a research question' search bar, a magnifying glass icon, and 'Sign up' and 'Sign In' buttons.

Title: It is essential to connect: Evaluating a Science Communication Boot Camp

Authors: Krista Longtin, Rebecca Wisner, J. M. Organ

Date: 15. Feb. 2022

Actions: Save | Cite | Share

Citations: 1 Citations

Study Snapshot:

- Population
- Sample size
- Methods

Text Summary: Sign in to view AI-powered features

Key Takeaway: The Science Communication Boot Camp effectively improved participants' communication skills and willingness to engage with non-specialist audiences, bridging the gap between science and policymakers.

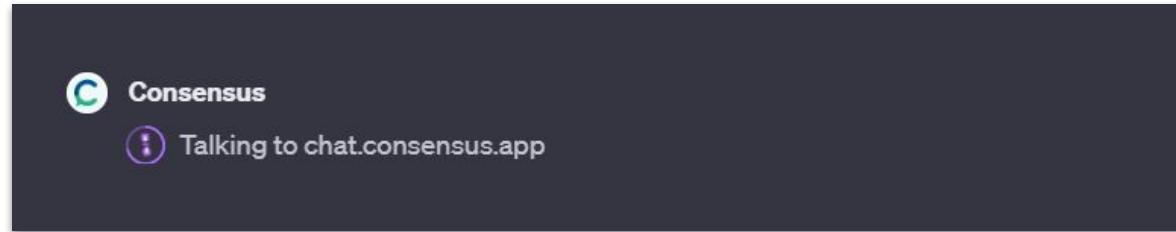
Abstract: Scientific knowledge has expanded dramatically in the 21st century. Yet, even in science where there is large consensus among the studies—evolution by natural selection, for example, or the human basis of accelerated climate change—the public and policymakers are not always in agreement with the science. To bridge this gap, scientists and educators need to connect and engage with diverse audiences with varying levels of science literacy. Communication scholars have identified several effective tactics to communicate effectively with non-specialist audiences. However, our sometimes-siloed thinking in science and higher education discourages sharing this knowledge across disciplinary lines. Furthermore, many training programs focus on educating about which communication strategies work, but they fail to provide participants with the opportunity to develop the skills required to listen effectively and respond in an engaging way. To that end, we created the Science Communication Boot Camp (SCBC) with support from an

https://consensus.app/papers/juggling-roles-experiencing-dilemmas-challenges-schuijer/f00812638fd2558a96bc277dbda52586/?utm_source=chatgpt

Custom GPTs: Actions

Die Fähigkeit eines Custom GPT, externe APIs anzusprechen, wodurch der GPT Einbinden von externen Daten und Anwendungen im Web

Function Calling



Ausblick

