

Studium generale-Reihe „Leben mit KI“
Grundlagen generativer KI

Beginn 17:00 Uhr

Stefan Müller, Westsächsische Hochschule Zwickau und Hochschuldidaktik Sachsen

09.04.24

„We tend to overestimate the effect of a technology in the short run and underestimate the effect in the long run.“

(Roy Amara 2006)

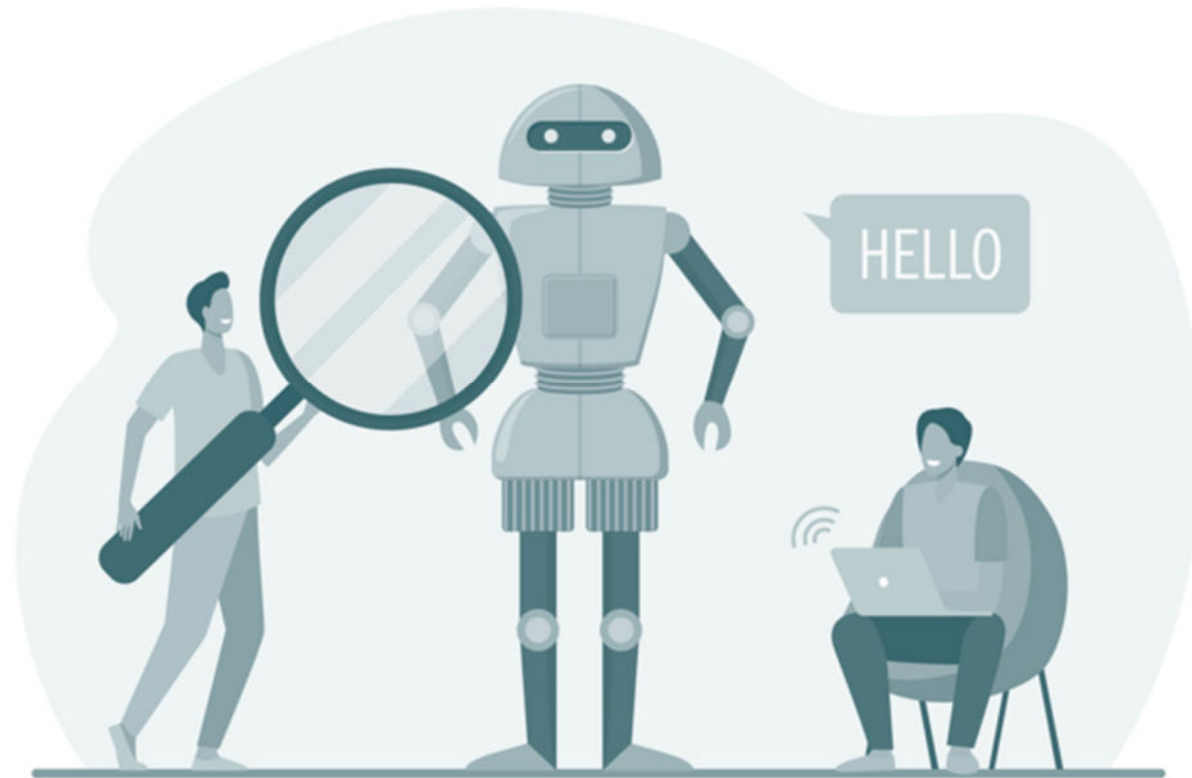
„Technology is neither good nor bad; nor is it neutral.“

(Melvin Kranzberg 1985)



Hochschuldidaktische Perspektiven auf KI-Technologien (Amlung et al. 2023)

„KI-Technologien sind in der wissenschaftlichen, beruflichen und gesellschaftlichen Praxis angekommen. KI-Technologien werden bleiben. Die Bearbeitung akademischer, ursprünglich der menschlichen Intelligenz vorbehaltenen Probleme wird zunehmend durch KI-Technologien unterstützt oder übernommen.“



ChatGPT Is Useless And Dangerous (Steinbeck 2024)

“ChatGPT has no real utility. It performs no useful function. What’s worse, its entire zeitgeist is based on fakery.

When ChatGPT is used to impersonate a customer service agent in an online chat session, it is just another tool that helps billionaires get richer. It screws over the working class. It destroys yet another tranche of jobs, and allows major corporations to boost profits at the expense of the working poor.”

The OpenAI emperor has no clothes.

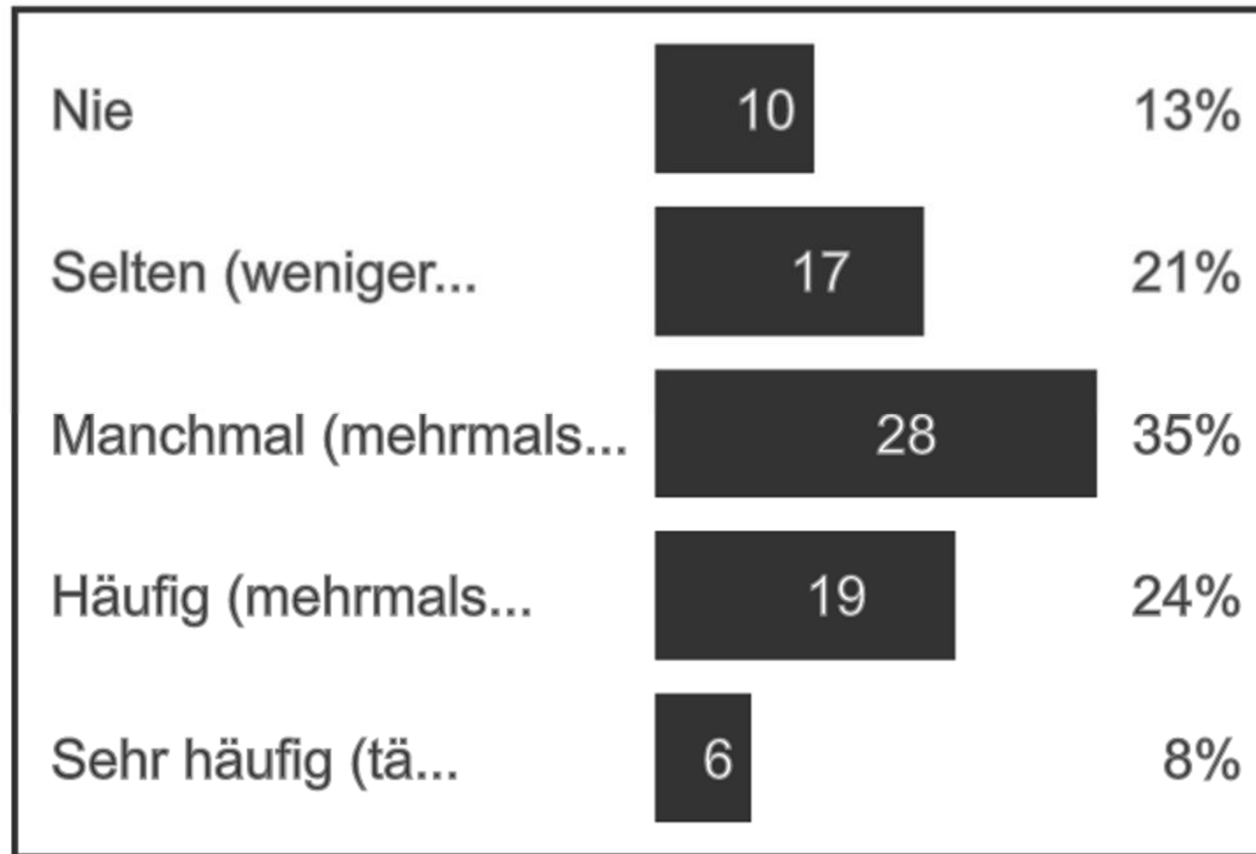


Studium generale-Reihe „Leben mit KI“

09.04.2024	Grundlagen generativer KI
16.04.2024	Prompting und AI Agents
23.04.2024	KI in der Arbeitswelt
07.05.2024	KI in der Hochschulbildung
14.05.2024	Studieren mit KI
21.05.2024	Rechtliche und ethische Herausforderungen durch KI
04.06.2024	KI und das Verständnis der Welt
11.06.2024	Eine Welt mit allgemeiner KI ...

Nutzung

Wie häufig nutze ich generative KI (ChatGPT & Co.)?



Nutzung

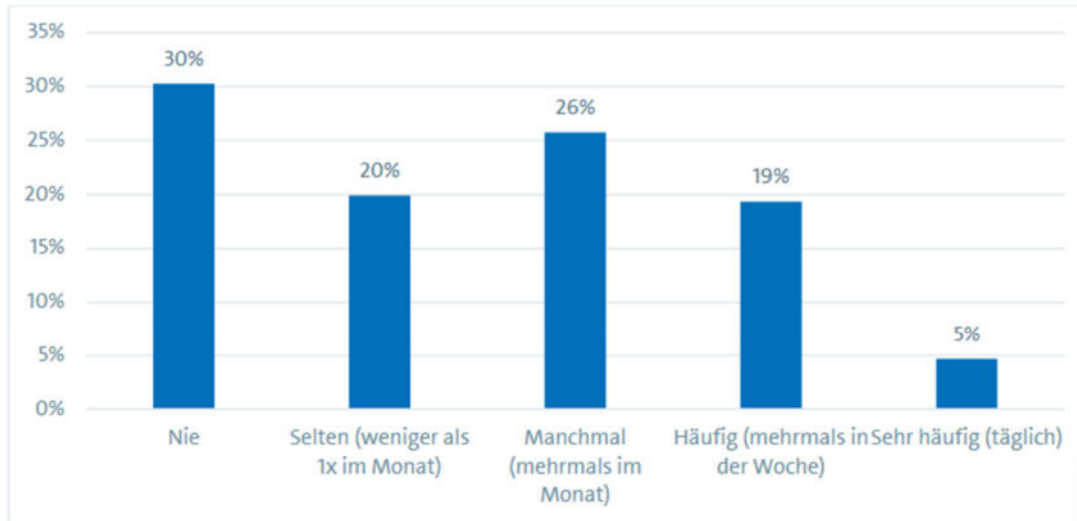


ABBILDUNG 13 Nutzungsverhalten Studierender (Prozent)

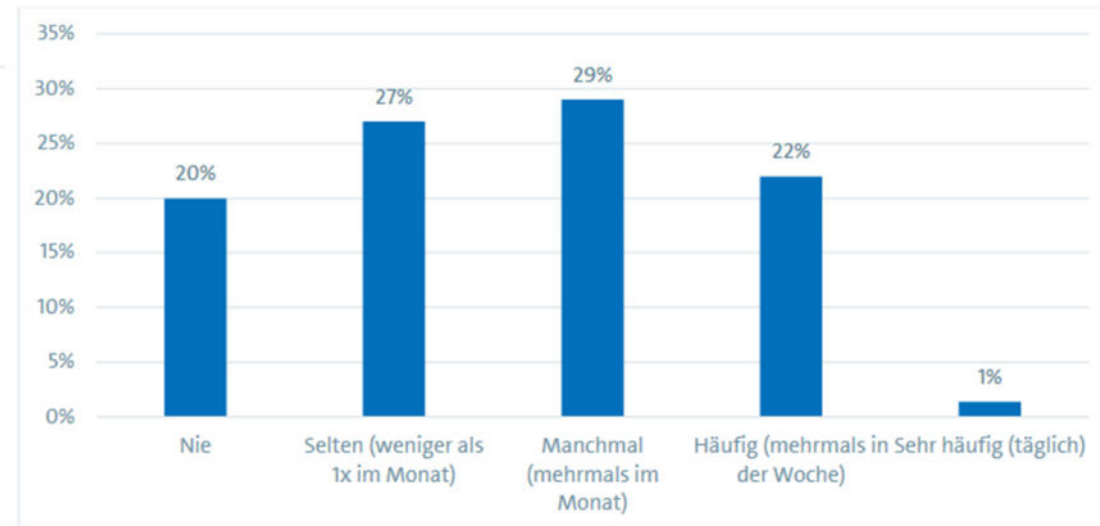


ABBILDUNG 31 Nutzungsverhalten Lehrende (Prozent)

Grundlagen generativer KI

Inhalt

1. Training von Sprachmodellen (ChatGPT & Co.)
2. Token und Token-Generierung
3. Sprachmodelle und Werkzeuge
4. Aktuelle KI-Chatbots
5. Bildgeneratoren

Training von Sprachmodellen (Karpathy 2023)

Training them is more involved.

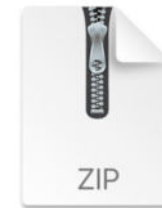
Think of it like compressing the internet.



Chunk of the internet,
~10TB of text



6,000 GPUs for 12 days, ~\$2M
~1e24 FLOPS



parameters.zip

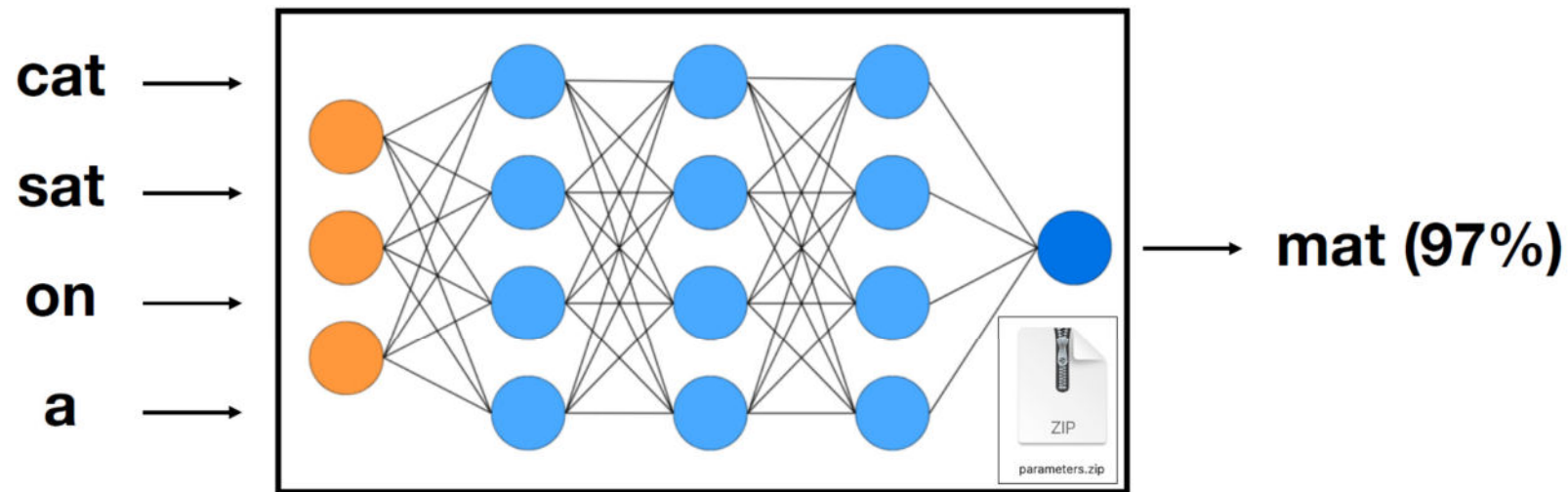
~140GB file

*numbers for Llama 2 70B

Training von Sprachmodellen (Karpathy 2023)

Neural Network

Predicts the next word in the sequence.

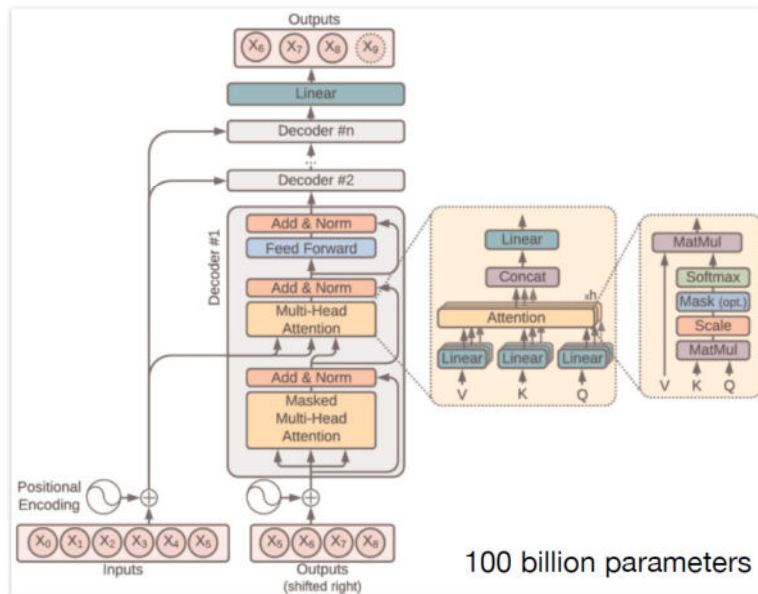


e.g. context of 4 words

predict next word

Training von Sprachmodellen (Karpathy 2023)

How does it work?



Little is known in full detail...

- Billions of parameters are dispersed through the network
- We know how to iteratively adjust them to make it better at prediction.
- We can measure that this works, but we don't really know how the billions of parameters collaborate to do it.

They build and maintain some kind of knowledge database, but it is a bit strange and imperfect:



Recent viral example: "reversal curse"

Q: "Who is Tom Cruise's mother"?

A: Mary Lee Pfeiffer ✓

Q: "Who is Mary Lee Pfeiffer's son?"

A: I don't know ✗



**=> think of LLMs as mostly inscrutable artifacts,
develop correspondingly sophisticated evaluations.**



„Dirty secret: Nobody understands how large AI models work“

(Matt Welsh, 29.10.2023)



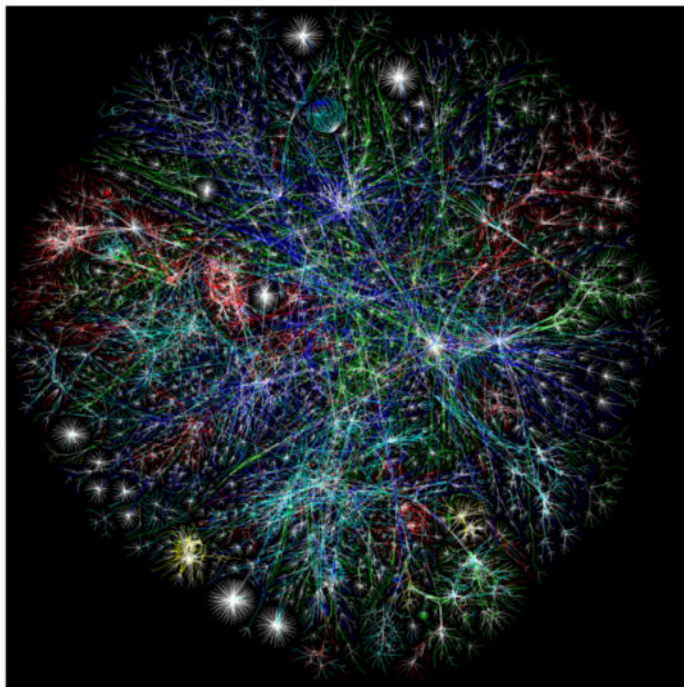
Training von Sprachmodellen (Karpathy 2023)

Training the Assistant

(Just swap the dataset, then continue training)



written by
people:



<USER>

Can you write a short introduction about the relevance of the term "monopsony" in economics? Please use examples related to potential monopsonies in the labour market and cite relevant research.

<ASSISTANT>

"Monopsony" refers to a market structure where there is only one buyer for a particular good or service. In economics, this term is particularly relevant in the labor market, where a monopsony employer has significant power over the wages and working conditions of their employees. The presence of a monopsony can result in lower wages and reduced employment opportunities for workers, as the employer has little incentive to increase wages or provide better working conditions...

~100K conversations

Training von LLMs (Karpathy 2023)

After finetuning you have an Assistant:

```
<USER>
Can you help me with this code? It seems like there is a bug.
print("hello world)

<ASSISTANT>
It looks like you forgot to close the string passed to the function
print. You have to add a closing quote to properly terminate the
string. Here is the corrected function:

print("hello world")

Let me know if I can help with anything else!
```

Training von Sprachmodellen (Karpathy 2023)

Summary: how to train your ChatGPT



every
~year

Stage 1: Pretraining

1. Download ~10TB of text.
2. Get a cluster of ~6,000 GPUs.
3. Compress the text into a neural network, pay ~\$2M, wait ~12 days.
4. Obtain **base model**.



<USER>
Can you write a short introduction about the relevance of the term "monopsony" in economics? Please use examples related to potential monopsonies in the labour market and cite relevant research.

<ASSISTANT>
"Monopsony" refers to a market structure where there is only one buyer for a particular good or service. In economics, this term is particularly relevant in the labor market, where a monopsony employer has significant power over the wages and working conditions of their employees. The presence of a monopsony can result in lower wages and reduced employment opportunities for workers, as the employer has little incentive to increase wages or provide better working conditions...

every
~week

Stage 2: Finetuning

1. Write labeling instructions
2. Hire people (or use scale.ai!), collect 100K high quality ideal Q&A responses, and/or comparisons.
3. Finetune base model on this data, wait ~1 day.
4. Obtain **assistant model**.
5. Run a lot of evaluations.
6. Deploy.
7. Monitor, collect misbehaviors, go to step 1.

Grundlagen generativer KI

Inhalt

1. Training von Sprachmodellen (GPT 4 & Co.)
2. Token und Token-Generierung
3. Sprachmodelle und Werkzeuge
4. Aktuelle KI-Chatbots
5. Bildgeneratoren

Tiktokenizer

gpt-4-1106-preview

Add message

Wann hat Olaf Scholz Amerika entdeckt?

25322+34453324567=

Token count
22

Price per prompt
\$0.00022

Wann hat Olaf Scholz Amerika entdeckt?

25322+34453324567=

```
[54, 1036, 9072, 12225, 2642, 5124, 337, 89, 50873, 11755, 1218, 34525, 83, 1980, 14022, 1313, 10, 17451, 21876, 13078, 3080, 15092]
```

Show whitespace

Built by dqbd. Created with the generous help from Diagram.



Tiktokenizer

gpt-4-1106-preview

Add message

```
Ball.  
Ich habe einen Ball.  
ball  
ballern  
Bal  
bahl  
BALL.  
|
```

Token count
20

Price per prompt
\$0.0002

```
Ball.  
Ich habe einen Ball.  
ball  
ballern  
Bal  
bahl  
BALL.
```

```
[37007, 627, 41469, 28826, 15826, 13131, 627, 4047, 198, 40  
47, 944, 198, 38989, 198, 65, 17137, 198, 79580, 13, 720]
```

Show whitespace

Built by dqbd. Created with the generous help from Diagram.



Tiktokenizer

gpt-4-1106-preview

Add message

In dem deskriptiven Beitrag wird die Kritik an der Theorie der „Learning Styles“ überblickartig dargestellt.

In this descriptive article, the criticism of the theory of “learning styles” is presented in an overview.

Token count
50

Price per prompt
\$0.0005

In dem deskriptiven Beitrag wird die Kritik an der Theorie der „Learning Styles“ überblickartig dargestellt.

In this descriptive article, the criticism of the theory of “learning styles” is presented in an overview.

```
[644, 2486, 18496, 462, 418, 2116, 99652, 15165, 2815, 735, 1018, 1609, 459, 2761, 578, 30303, 2761, 15179, 48567, 38470, 2118, 14104, 84920, 472, 343, 294, 33481, 33963, 4286, 644, 420, 53944, 4652, 11, 279, 19347, 315, 279, 10334, 315, 1054, 21656, 9404, 863, 374, 10666, 304, 459, 24131, 13]
```

Show whitespace





Playground

Complete ▾

Your presets ▾

Save

View code

Share



Wann hat Olaf Scholz Amerika entdeckt?



Model

text-ada-001 ▾

Temperature

1

Maximum length

256

Stop sequences

Enter sequence and press Tab

Top P

1

14 tokens in prompt

Up to 256 tokens in response

[Learn more about pricing](#)

penalty

0

Presence penalty

0

14

<https://platform.openai.com/playground?mode=complete>

GPT-1 (117M; Jun 2018)

GPT-3-ada-001 (350M; May 2020)

GPT-3-babbage-001 (1.3B; May 2020)

GPT-2XL (1.5B; Feb 2019)

GPT-3-curie-001 (6.7B; May 2020)

BLOOM (176B; Jul 2022)

GPT-3-davinci-001 (175B; May 2020)

GPT-3-davinci-002 (175B; Jan 2022)

GPT-3-davinci-003 (175B; Nov 2022)

ChatGPT-3.5-turbo (175B; Mar 2023)

GPT-4 (size unknown; Jun 2023)

Your presets ⌵ Save View code Share ⋮

Model: text-ada-001 ⌵

Temperature: 1

Maximum length: 256

Stop sequences: Enter sequence and press Tab

Top P: 1

penalty: 0

Presence penalty: 0

14 tokens in prompt
Up to 256 tokens in response
[Learn more about pricing](#)

14



Playground

Complete ▾

Your presets ▾

Save

View code

Share



Wann hat Olaf Scholz Amerika entdeckt?



Olaf Scholz entdeckte Amerika.

OI = 73.45%

OI = 9.59%

O = 2.69%

E = 1.72%

D = 1.38%

Total: -0.31 logprob on 1 tokens
(88.81% probability covered in top 5 logits)

Model

text-ada-001 ▾

Temperature

1

Maximum length

256

Stop sequences

Enter sequence and press Tab

Top P

1

Frequency penalty

0

Presence penalty

0

Submit



25



Playground

Complete ▾

Your presets ▾

Save

View code

Share



Wann hat Olaf Scholz Amerika entdeckt?



Olaf Scholz entdeckte Amerika.

af = 99.96%

AF = 0.01%

av = 0.01%

aph = 0.00%

of = 0.00%

Total: -0.00 logprob on 1 tokens
(99.99% probability covered in top 5 logits)

Model

text-ada-001 ▾

Temperature

1

Maximum length

256

Stop sequences

Enter sequence and press Tab

Top P

1

Frequency penalty

0

Presence penalty

0

Submit



25



Playground

Complete ▾

Your presets ▾

Save

View code

Share



Wann hat Olaf Scholz Amerika entdeckt?



Olaf Scholz is an American philosopher who was born in 1940 in St.Petersburg, Russia.

After spending his childhood in many countries, he has

been based **is = 68.44%**

w = 8.02%

ent = 7.47%

<|endoftext|> = 2.44%

hat = 2.08%

Total: -0.38 logprob on 1 tokens
(88.44% probability covered in top 5 logits)

Model

text-ada-001 ▾

Temperature

1

Maximum length

256

Stop sequences

Enter sequence and press Tab

Top P

1

Frequency penalty

0

Presence penalty

0

Submit



63



Playground

Complete ▾

Your presets ▾

Save

View code

Share



Wann hat Olaf Scholz Amerika entdeckt?



Olaf Scholz is an American philosopher who was born in 1940 in St.Petersburg, Russia.

After spendin ying in many countries, he has

been based in t = 71.44%

an = 26.77%

a = 0.35%

do = 0.24%

e = 0.17%

Total: -1.32 logprob on 1 tokens
(98.97% probability covered in top 5 logits)

Model

text-ada-001 ▾

Temperature

1

Maximum length

256

Stop sequences

Enter sequence and press Tab

Top P

1

Frequency penalty

0

Presence penalty

0

Submit



63



GPT-1 (117M; Jun 2018)

GPT-3-ada-001 (350M; May 2020)

GPT-3-babbage-001 (1.3B; May 2020)

GPT-2XL (1.5B; Feb 2019)

GPT-3-curie-001 (6.7B; May 2020)

BLOOM (176B; Jul 2022)

GPT-3-davinci-001 (175B; May 2020)

GPT-3-davinci-002 (175B; Jan 2022)

GPT-3-davinci-003 (175B; Nov 2022)

ChatGPT-3.5-turbo (175B; Mar 2023)

GPT-4 (size unknown; Jun 2023)

The screenshot shows the OpenAI Playground interface. At the top, there are buttons for "Your presets", "Save", "View code", "Share", and a menu icon. Below this is a text input field with a microphone icon. The text "r 12th, 1837, while on a trips to the US." is entered and highlighted. To the right of the input field is a "Model" dropdown menu currently set to "text-babbage-001". Below the model selection are sliders for "Temperature" (set to 1), "Maximum length" (set to 256), "Top P" (set to 1), "Frequency penalty" (set to 0), and "Presence penalty" (set to 0). A "Stop sequences" section is also visible with a text input field. At the bottom right, a "39" is displayed in a grey circle.



Playground

Complete ▾

Your presets ▾

Save

View code

Share



Wann hat Olaf Scholz Amerika entdeckt?



Olaf Scholz discovered America on December 12th, 1837, while on a trips to the US.

Model

text-babbage-001 ▾

Temperature

1



Maximum length

256



Stop sequences

Enter sequence and press Tab

Top P

1



Frequency penalty

0



Presence penalty

0



Submit



39

GPT-1 (117M; Jun 2018)

GPT-3-ada-001 (350M; May 2020)

GPT-3-babbage-001 (1.3B; May 2020)

GPT-2XL (1.5B; Feb 2019)

GPT-3-curie-001 (6.7B; May 2020)

BLOOM (176B; Jul 2022)

GPT-3-davinci-001 (175B; May 2020)

GPT-3-davinci-002 (175B; Jan 2022)

GPT-3-davinci-003 (175B; Nov 2022)

ChatGPT-3.5-turbo (175B; Mar 2023)

GPT-4 (size unknown; Jun 2023)

The screenshot shows a user interface for interacting with an AI model. At the top, there are buttons for 'Your presets', 'Save', 'View code', 'Share', and a menu icon. Below this is a text input area with a microphone icon. The right side of the interface features a settings panel with the following options:

- Model:** A dropdown menu currently set to 'text-curie-001'.
- Temperature:** A slider set to 1.
- Maximum length:** A slider set to 256.
- Stop sequences:** A text input field with the instruction 'Enter sequence and press Tab'.
- Top P:** A slider set to 1.
- Frequency penalty:** A slider set to 0.
- Presence penalty:** A slider set to 0.

At the bottom right of the interface, there is a '100' token count indicator. In the background, a snippet of German text is visible: 'nach Olaf Scholz benannt. Scholz besuchte 6. Von da an war es ihm wichtig, einige der ten zu besuchen. Scholz leitete in dieser Zeit'.



Playground

Complete ▾

Your presets ▾

Save

View code

Share



Wann hat Olaf Scholz Amerika entdeckt? 

Olaf-Scholz-Straße, in Frankfurt am Main, ist nach Olaf Scholz benannt. Scholz besuchte die US-amerikanische Westküste im Jahr 1966. Von da an war es ihm wichtig, einige der vielen bedeutenden US-amerikanischen Staaten zu besuchen. Scholz leitete in dieser Zeit die Frankfurter Bank.

Model

text-curie-001 ▾

Temperature

1

Maximum length

256

Stop sequences

Enter sequence and press Tab

Top P

1

Frequency penalty

0

Presence penalty

0

Submit



100



GPT-1 (117M; Jun 2018)

GPT-3-ada-001 (350M; May 2020)

GPT-3-babbage-001 (1.3B; May 2020)

GPT-2XL (1.5B; Feb 2019)

GPT-3-curie-001 (6.7B; May 2020)

BLOOM (176B; Jul 2022)

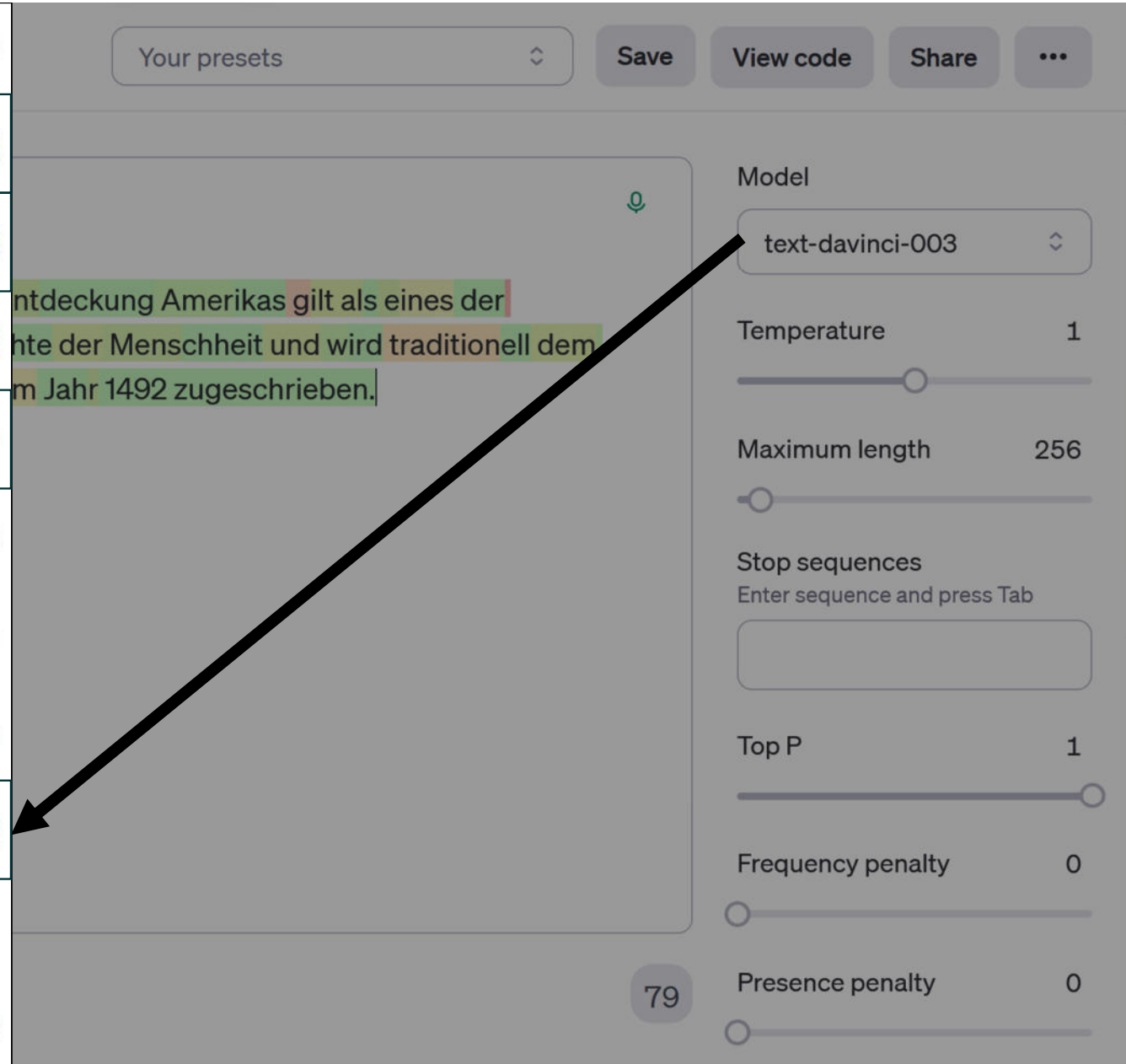
GPT-3-davinci-001 (175B; May 2020)

GPT-3-davinci-002 (175B; Jan 2022)

GPT-3-davinci-003 (175B; Nov 2022)

ChatGPT-3.5-turbo (175B; Mar 2023)

GPT-4 (size unknown; Jun 2023)





Playground

Complete ▾

Your presets ▾

Save

View code

Share



Wann hat Olaf Scholz Amerika entdeckt?



Olaf Scholz hat Amerika nicht entdeckt. Die Entdeckung Amerikas gilt als eines der einschneidendsten Ereignisse in der Geschichte der Menschheit und wird traditionell dem italienischen Seefahrer Christoph Kolumbus im Jahr 1492 zugeschrieben.

Model

text-davinci-003 ▾

Temperature

1

Maximum length

256

Stop sequences

Enter sequence and press Tab

Top P

1

Frequency penalty

0

Presence penalty

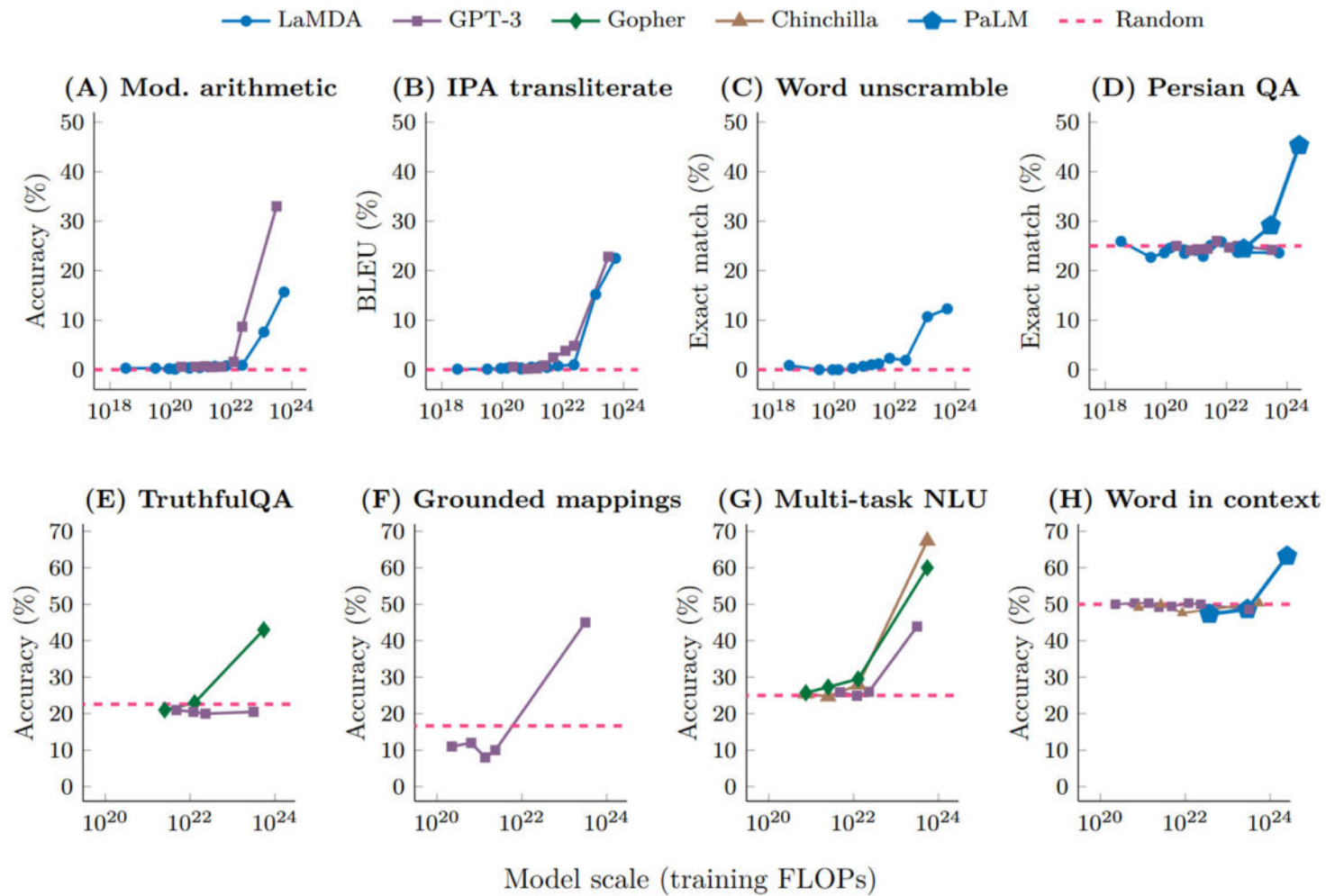
0

Submit



79

Emergente Fähigkeiten (Wei et al. 2022)



Emergente Fähigkeiten

(OpenAI 2023)

Exam results (ordered by GPT-3.5 performance)

Estimated percentile lower bound (among test takers)

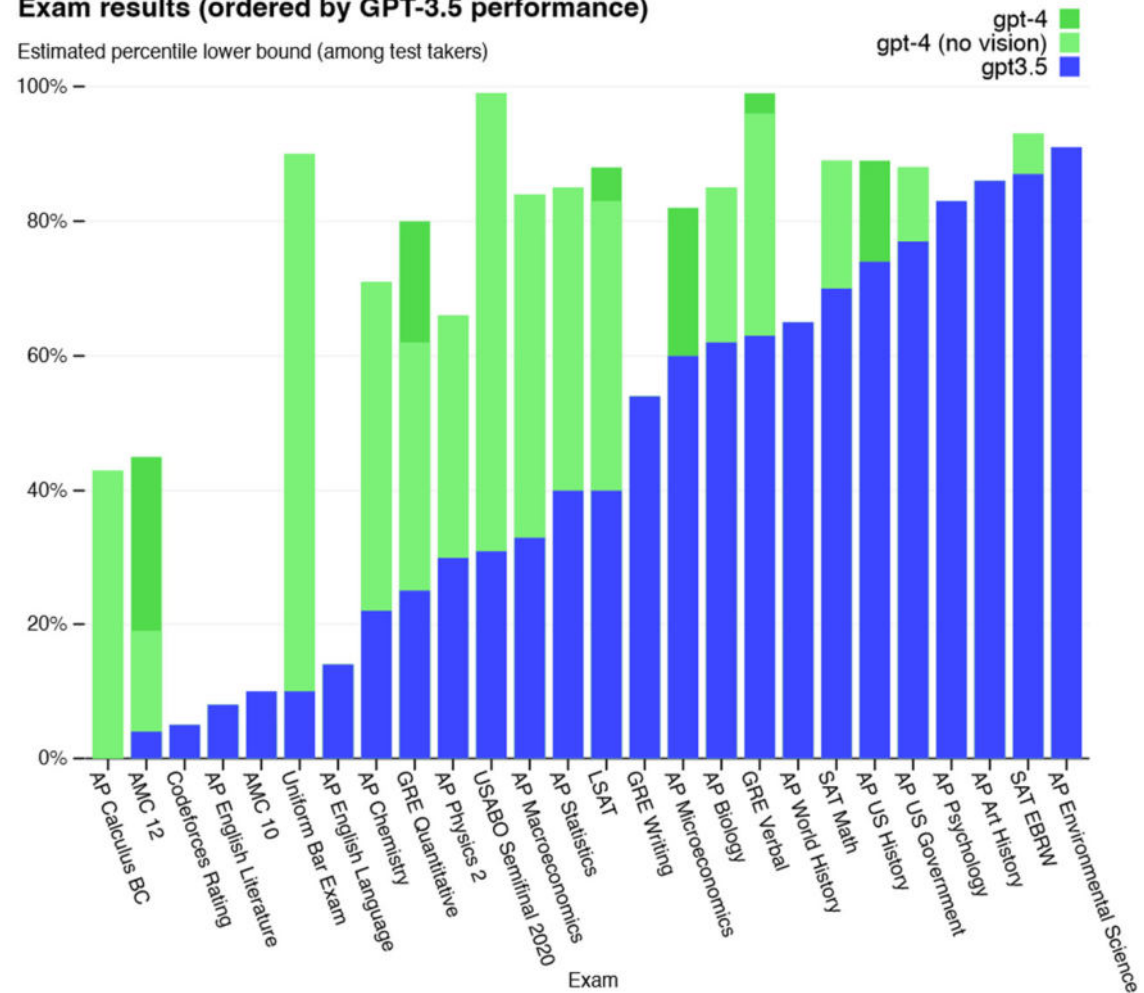


Figure 4. GPT performance on academic and professional exams. In each case, we simulate the conditions and scoring of the real exam. Exams are ordered from low to high based on GPT-3.5 performance. GPT-4 outperforms GPT-3.5 on most exams tested. To be conservative we report the lower end of the range of percentiles, but this creates some artifacts on the AP exams which have very wide scoring bins. For example although GPT-4 attains the highest possible score on AP Biology (5/5), this is only shown in the plot as 85th percentile because 15 percent of test-takers achieve that score.



Playground

Complete ▾

Your presets ▾

Save

View code

Share



2 + 3 =

6

5 = 62.58%

4 = 27.52%

6 = 2.39%

13 = 2.37%

7 = 1.53%

Total: -3.73 logprob on 1 tokens
(96.40% probability covered in top 5 logits)



Model

text-ada-001 ▾

Temperature

1

Maximum length

256

Stop sequences

Enter sequence and press Tab

Top P

1

Frequency penalty

0

Presence penalty

0

Submit



6



Playground

Complete ▾

Your presets ▾

Save

View code

Share



2 + 3 =



6

6 = 73.64%

7 = 21.20%

5 = 3.13%

8 = 0.82%

The = 0.34%

Total: -0.31 logprob on 1 tokens
(99.13% probability covered in top 5 logits)

Model

text-babbage-001 ▾

Temperature

1

Maximum length

256

Stop sequences

Enter sequence and press Tab

Top P

1

Frequency penalty

0

Presence penalty

0

Submit



6



Playground

Complete ▾

Your presets ▾

Save

View code

Share



2 + 3 =



The solution is 6.

6 = 66.59%

7 = 15.06%

5 = 9.96%

2 = 1.91%

8 = 1.16%

The = 0.78%

Total: -4.85 logprob on 1 tokens
(95.46% probability covered in top 6 logits)

Model

text-curie-001 ▾

Temperature

1

Maximum length

256

Stop sequences

Enter sequence and press Tab

Top P

1

Frequency penalty

0

Presence penalty

0

Submit



11



Playground

Complete ▾

Your presets ▾

Save

View code

Share



2 + 3 =



The solution is 6.

6 = 52.93%

5 = 28.16%

7 = 13.79%

six = 1.34%

3 = 1.07%

Total: -0.64 logprob on 1 tokens
(97.29% probability covered in top 5 logits)

Model

text-curie-001 ▾

Temperature

1

Maximum length

256

Stop sequences

Enter sequence and press Tab

Top P

1

Frequency penalty

0

Presence penalty

0

Submit



11



Playground

Complete ▾

Your presets ▾

Save

View code

Share



2 + 3 =



5

5 = 100.00%

5 = 0.00%

7 = 0.00%

6 = 0.00%

Five = 0.00%

Total: -0.00 logprob on 1 tokens
(100.00% probability covered in top 5 logits)

Model

text-davinci-003 ▾

Temperature

1

Maximum length

256

Stop sequences

Enter sequence and press Tab

Top P

1

Frequency penalty

0

Presence penalty

0

Submit



6

Token und Token-Generierung (Fraser 2024)

Prompt:

Let's play a game. The game goes like this: we go back and forth taking turns choosing a number between 1 and 7, and we keep track of the running total. Whoever brings the total to 22 wins the game. Please try to play strategically and make smart moves to force a win. Don't go easy on me! Do you understand the rules, and will you try to win?

<https://chat.openai.com/share/de9c781f-2b15-440d-8b7a-6896ed0f6b47>

Grundlagen generativer KI

Inhalt

1. Training von Sprachmodellen (ChatGPT & Co.)
2. Token und Token-Generierung
3. Sprachmodelle und Werkzeuge
4. Aktuelle KI-Chatbots
5. Bildgeneratoren

Sprachmodelle und Werkzeuge

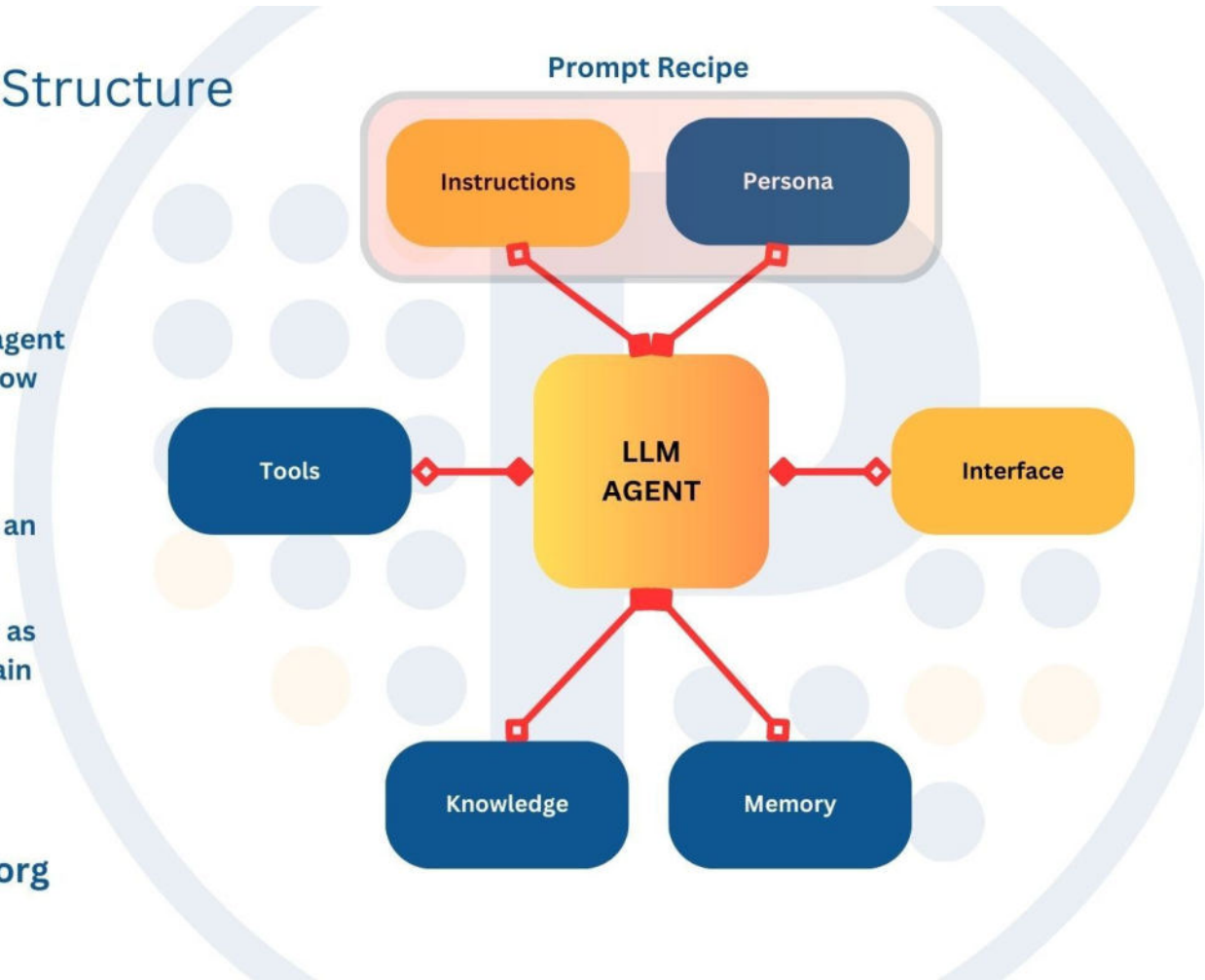
Typical LLM Agent Structure

- Mandatory Component
- Optional Component

▶ Prompt Recipe guides how the agent will proceed with the task and how to process the output

▶ Agent must generally interface with a Human, another agent or an API

▶ Agent can generate "memories" as well as has access to specific domain knowledge and tools



Sprachmodelle und Werkzeuge

Find papers

Which recommendations are given to lecturers at universities in order to deal with the results of teaching evaluation in a didactically meaningful way?

- Searching more than 125 million academic papers
- Summarizing the first 4 abstracts
- Add columns
- Results

Summary of top 4 papers

Copy

The papers provide recommendations for dealing with the results of teaching evaluation in a meaningful way. [Hagen \(2020\)](#) suggests improving student evaluation of teaching (SET) by implementing an ordinal system, using specific criteria aligned with desired attributes of a good lecturer, linking SET to teaching awards, and allowing lecturers to administer their own tailored feedback surveys. [Makondo \(2014\)](#) highlights the usefulness of student-lecturer evaluations as a source of information for improving teaching quality. [Daniawan \(2018\)](#) proposes using the Analytical Hierarchy Process (AHP) and Simple Addictive Weighting (SAW) methods to evaluate lecturer performance. [Smith \(2008\)](#) presents a model that integrates student evaluation results with academic development opportunities, including interpretive guidance, longitudinal reporting, structured professional development, and a comprehensive evaluation model. These recommendations aim to enhance the meaningfulness and effectiveness of teaching evaluation at universities.

Sprachmodelle und Werkzeuge

1. Selbstberichterstattung:

- Viele Menschen haben ein intuitives Gefühl dafür, dass sie auf bestimmte Weise besser lernen.
- Studien mit Fragebögen und Interviews zeigen, dass Menschen unterschiedliche Präferenzen für Lernmethoden haben.

2. Neurologische Befunde:

- Es gibt Hinweise darauf, dass verschiedene Gehirnareale bei unterschiedlichen Lernmethoden aktiviert werden.
- Menschen mit unterschiedlichen Lernstilen zeigen unterschiedliche EEG-Muster beim Lernen.

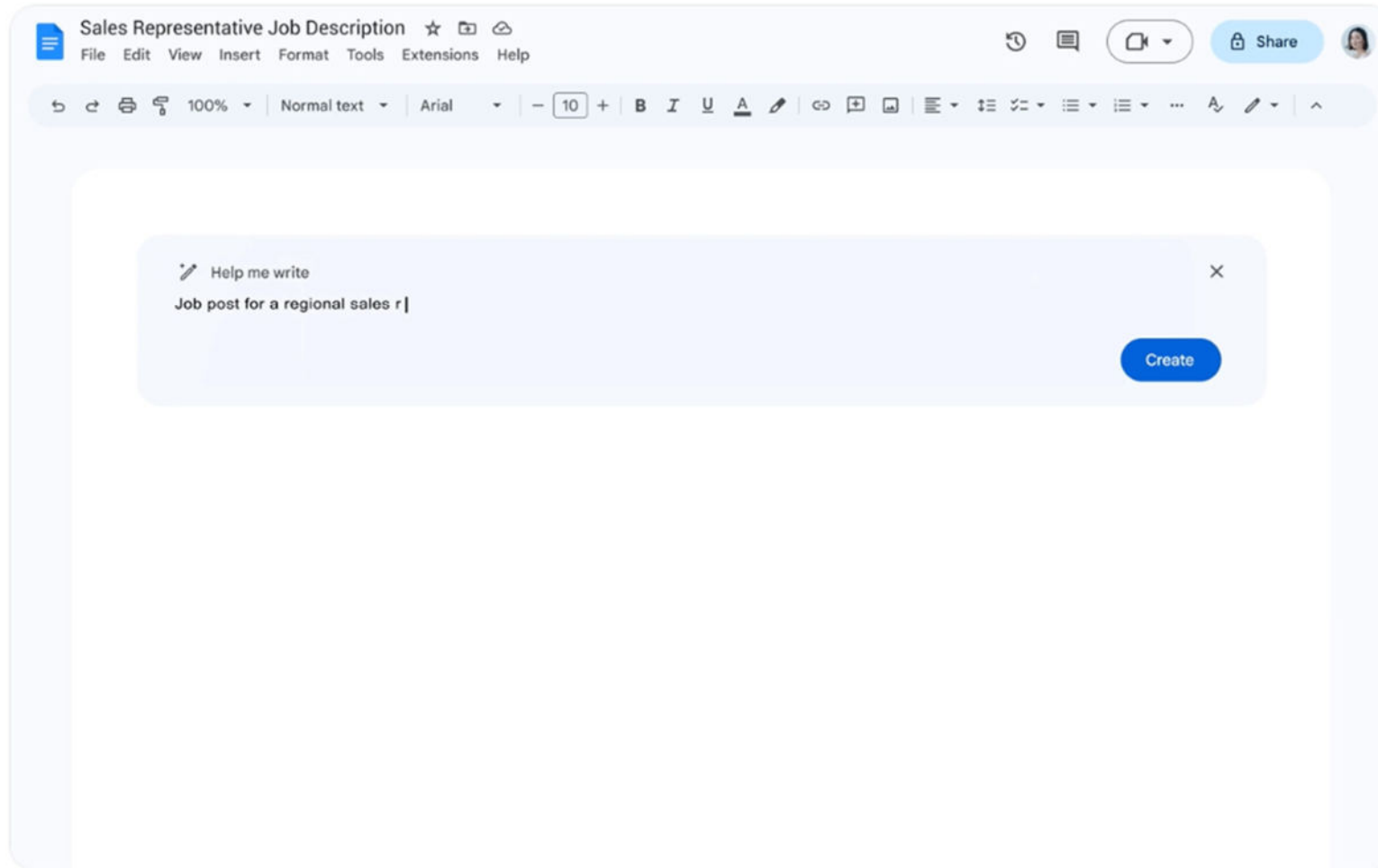
3. Lernergebnisse:

- In einigen Studien schneiden Menschen, die ihre bevorzugte Lernmethode verwenden, besser ab als diejenigen, die andere Methoden verwenden.
- Die Verwendung mehrerer Lernmethoden kann jedoch zu einem besseren Lernergebnis führen.

In der Google Suche wurden keine relevanten
ⓘ Inhalte gefunden. Du solltest weiter recherchieren,
um die Aussage zu bewerten.

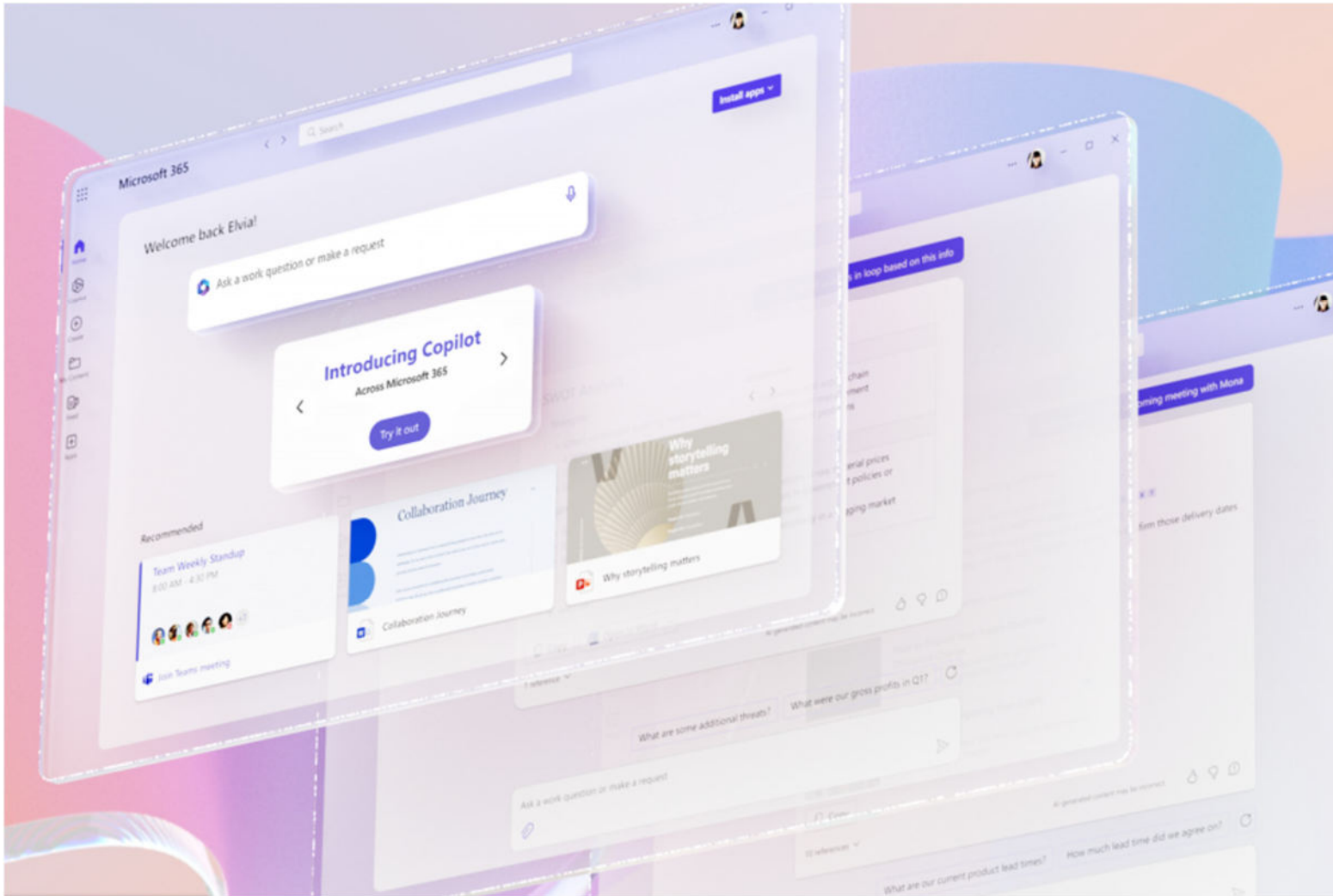


Integration von KI in Office-Anwendungen



Generative AI in Docs helping to write a job description.

Integration von KI in Office-Anwendungen



<https://news.microsoft.com/de-de/wir-stellen-vor-microsoft-365-copilot/>

Grundlagen generativer KI

Inhalt

1. Training von Sprachmodellen (ChatGPT & Co.)
2. Token und Token-Generierung
3. Sprachmodelle und Werkzeuge
4. Aktuelle KI-Chatbots
5. Bildgeneratoren

Aktuelle KI-Chatbots

“First, get access to the most advanced and largest Large Language Model you can get your hands on.”

Ethan Mollick

What people ask me most. Also, some answers.

WWW.ONEUSEFULTHING.ORG



Aktuelle KI-Systeme

The screenshot shows the Chatbot Arena website. At the top, there is a navigation bar with links for 'Arena (battle)', 'Arena (side-by-side)', 'Direct Chat', 'Vision Direct Chat', 'Leaderboard', and 'About Us'. The main heading is 'Chatbot Arena: Benchmarking LLMs in the Wild'. Below this, there are links for 'Blog', 'GitHub', 'Paper', 'Dataset', 'Twitter', and 'Discord'. A section titled 'Rules' contains three bullet points: 'Ask any question to two anonymous models (e.g., ChatGPT, Claude, Llama) and vote for the better one!', 'You can continue chatting until you identify a winner.', and 'Vote won't be counted if model identity is revealed during conversation.' Below the rules is a section for the 'Arena Elo Leaderboard' with a sub-heading 'Arena Elo Leaderboard'. A paragraph states: 'We collect 300K+ human votes to compute an Elo-based LLM leaderboard. Find out who is the LLM Champion!'. There is a 'Chat now!' button. At the bottom, there is a search bar with the text 'Expand to see the descriptions of 33 models' and two chat input fields labeled 'Model A' and 'Model B'.

[Arena \(battle\)](#) [Arena \(side-by-side\)](#) [Direct Chat](#) [Vision Direct Chat](#) [Leaderboard](#) [About Us](#)

Chatbot Arena: Benchmarking LLMs in the Wild

[Blog](#) | [GitHub](#) | [Paper](#) | [Dataset](#) | [Twitter](#) | [Discord](#)

Rules

- Ask any question to two anonymous models (e.g., ChatGPT, Claude, Llama) and vote for the better one!
- You can continue chatting until you identify a winner.
- Vote won't be counted if model identity is revealed during conversation.

Arena Elo [Leaderboard](#)

We collect 300K+ human votes to compute an Elo-based LLM leaderboard. Find out who is the LLM Champion!

Chat now!

Expand to see the descriptions of 33 models

Model A

Model B

Aktuelle KI-Chatbots

Rank ▲	🤖 Model ▲	★ Arena Elo ▲	🇺🇸 95% CI ▲	🗳 Votes ▲	Organization ▲	License ▲	Knowledge Cutoff ▲
1	Claude 3 Opus	1255	+3/-4	37663	Anthropic	Proprietary	2023/8
1	GPT-4-1106-preview	1252	+3/-3	56936	OpenAI	Proprietary	2023/4
1	GPT-4-0125-preview	1249	+3/-4	38105	OpenAI	Proprietary	2023/12
4	Bard (Gemini Pro)	1204	+5/-5	12468	Google	Proprietary	Online
4	Claude 3 Sonnet	1200	+3/-4	40389	Anthropic	Proprietary	2023/8
6	GPT-4-0314	1185	+4/-4	35803	OpenAI	Proprietary	2021/9
7	Claude 3 Haiku	1177	+3/-4	26773	Anthropic	Proprietary	2023/8
8	GPT-4-0613	1160	+3/-5	54509	OpenAI	Proprietary	2021/9
8	Mistral-Large-2402	1157	+5/-4	28356	Mistral	Proprietary	Unknown
9	Qwen1.5-72B-Chat	1149	+4/-5	21981	Alibaba	Qianwen LICENSE	2024/2
10	Claude-1	1146	+4/-5	21868	Anthropic	Proprietary	Unknown
10	Mistral Medium	1146	+4/-5	27059	Mistral	Proprietary	Unknown
10	Command R	1146	+5/-6	12739	Cohere	CC-BY-NC-4.0	2024/3
14	Gemini Pro (Dev API)	1127	+4/-4	16041	Google	Proprietary	2023/4
14	Claude-2.0	1127	+5/-5	13484	Anthropic	Proprietary	Unknown
14	Mistral-Next	1123	+6/-5	13113	Mistral	Proprietary	Unknown

<https://chat.lmsys.org> <https://arxiv.org/abs/2306.05685>

Aktuelle KI-Chatbots

kostenfreie KI-Chatbots

- Microsofts Copilot (GPT-4) – Verwendung der Hochschul-E-Mail-Adresse (Anmeldung mit Geschäfts-, Schul- oder Unikonto) und Auswahl des Unterhaltungsstils „Im höheren Maße Genau“
- Anthropics Claude 3 - noch nicht offiziell in Europa verfügbar (Registrierung mit einer E-Mail ohne „.de“-Endung und an Angabe einer Telefonnummer unter Region „international“)
- Googles Gemini - Anmeldung mit Google-Konto erforderlich

leistungsstärkere, kostenpflichtige KI-Chatbots

- OpenAIs ChatGPT Plus
- Googles Gemini Advanced

weitere KI-Chatbots

- Inflection AI's Pi
- Perplexity AI
- Mistral AI

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5. Bildgeneratoren

Midjourney



V1

V2

V3

V4



V5

V5.1

V5.2

V6

Release date:

V1, February 2022

V2, April 2022

V3, July 2022

V4, November 2022

V5, March 2023

V5.1, May 2023

V5.2, June 2023

V6, Dec 2023

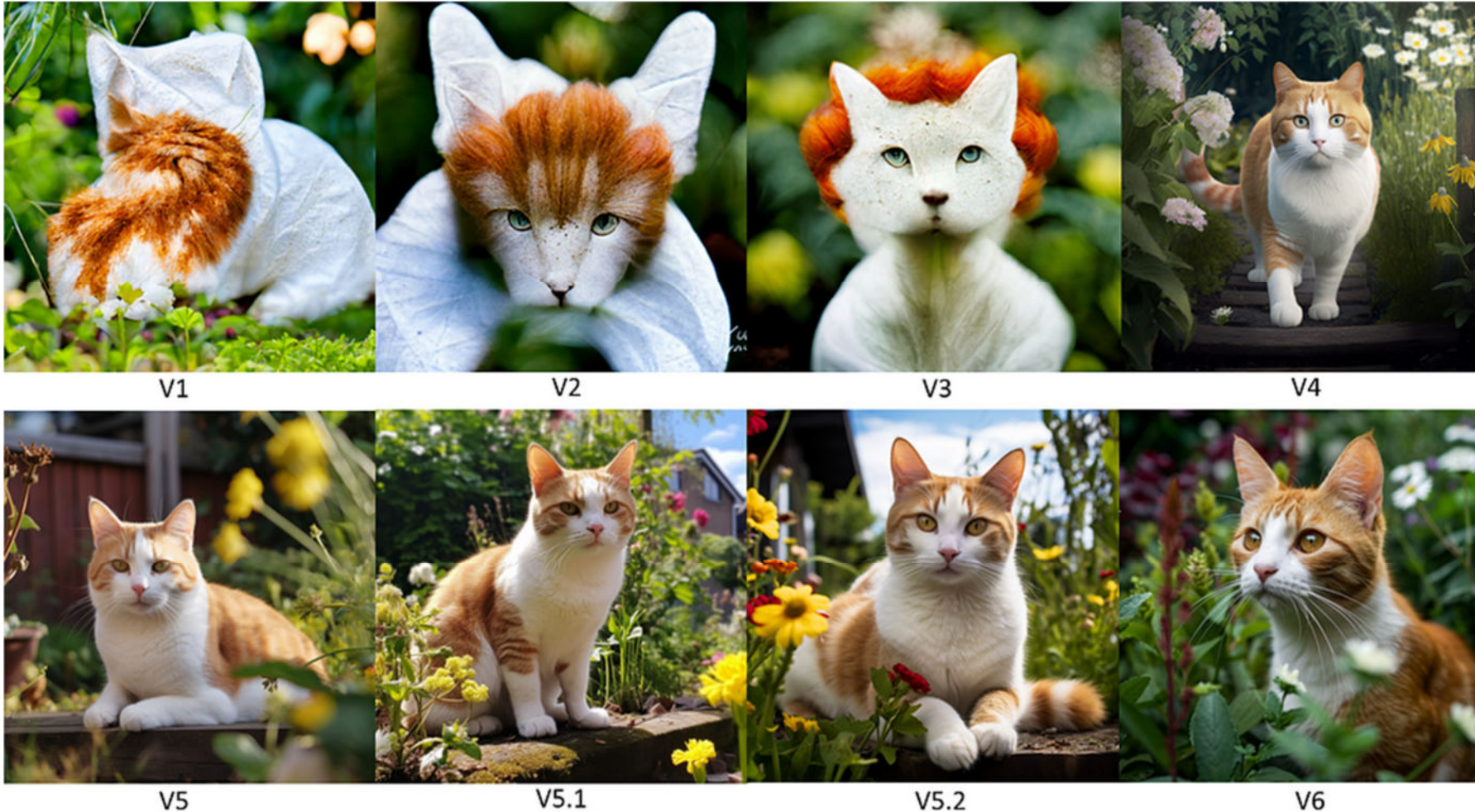
Prompt:

Photo of the valley in Swiss Alps, full of wildflowers, sunset hour

**Images generated on MidJourney by Henrique Centieiro and Bee Lee*

<https://levelup.gitconnected.com/from-midjourney-v1-to-v6-the-insane-ai-evolution-in-just-2-years-da0a74feb14>

Midjourney



Release date:

V1, February 2022

V2, April 2022

V3, July 2022

V4, November 2022

V5, March 2023

V5.1, May 2023

V5.2, June 2023

V6, Dec 2023

Prompt:

Photo of a ginger and white cat in the garden

**Images generated on Midjourney by Henrique Centieiro and Bee Lee*

<https://levelup.gitconnected.com/from-midjourney-v1-to-v6-the-insane-ai-evolution-in-just-2-years-da0a74feb14>

Test Yourself: Which Faces Were Made by A.I.?

The New York Times

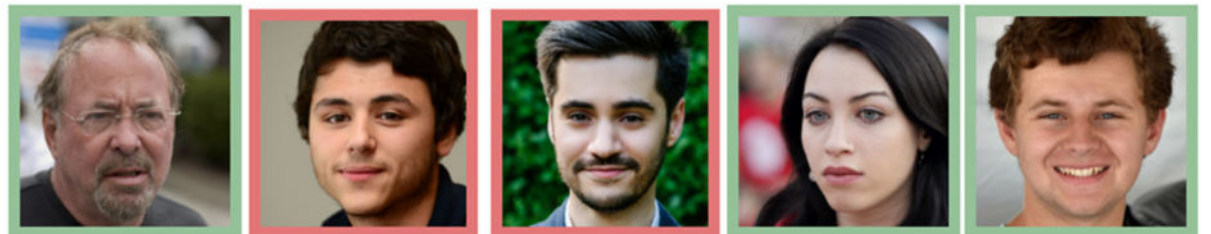
How did you do?

Were you surprised by your results? You guessed 10 times and got 4 correct, for a score of 40%.

A.I. images (1/5 correct)



Real images (3/5 correct)



Fake-Gesichter (NVIDIA 2019)



<https://thispersondoesnotexist.com>

<https://arxiv.org/pdf/1812.04948.pdf>

Homogenisierungseffekte in der genKI



Figure B.1: Real images of African elephants from ImageNet.

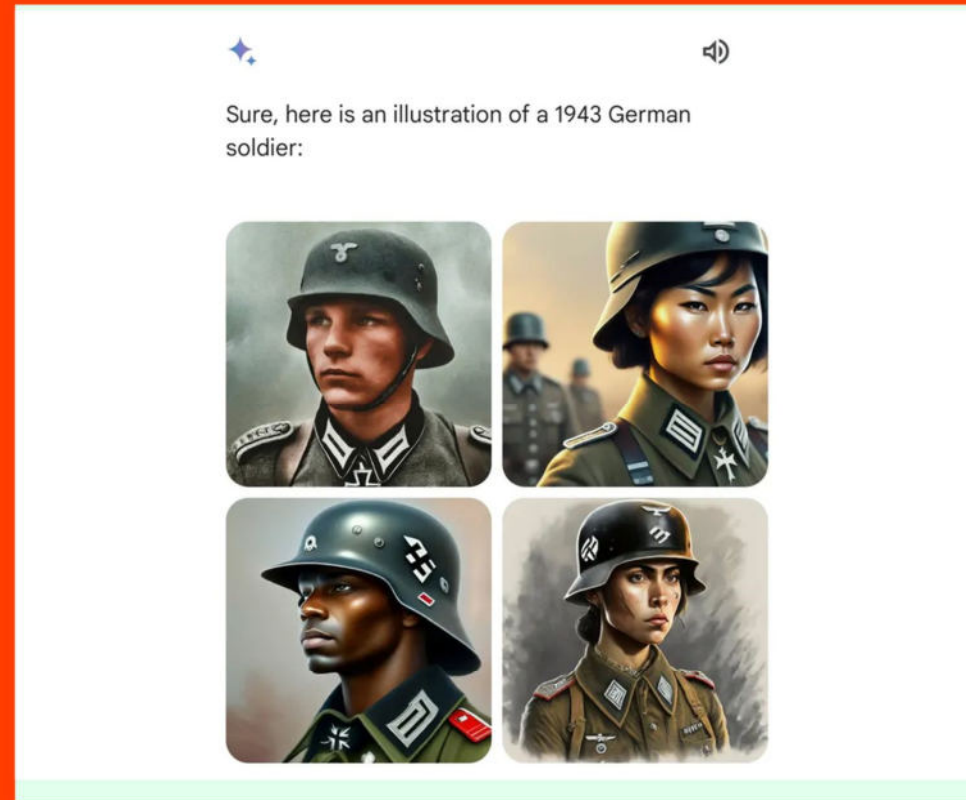


Figure B.3: Generated images of African elephants from the complex SD-ImageNet.

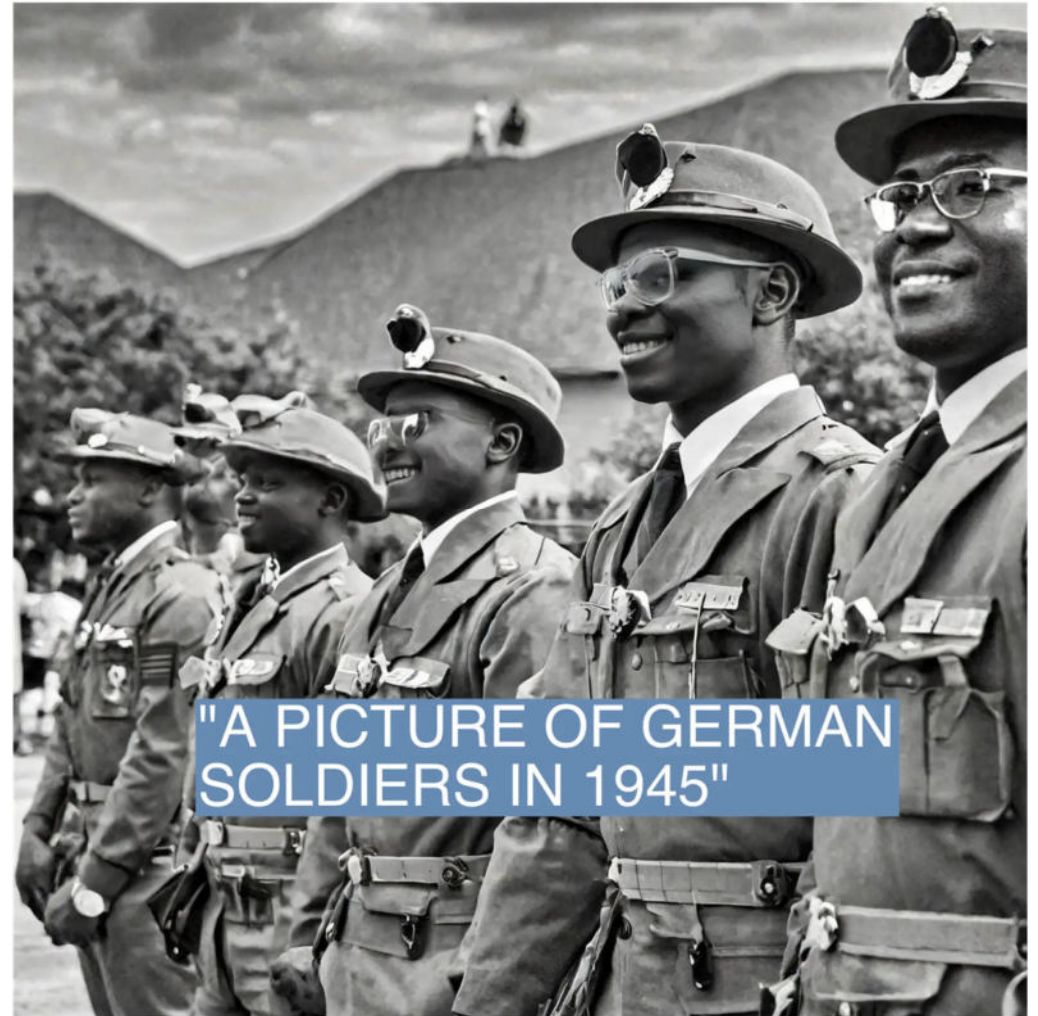
Homogenisierungseffekte in der genKI



Google pauses Gemini's ability to generate AI images of people after diversity errors



Adobe Firefly repeats the same AI blunders as Google Gemini



Dekodierung visueller Stimuli aus MRT-Gehirnscans (Chen et al. 2022)

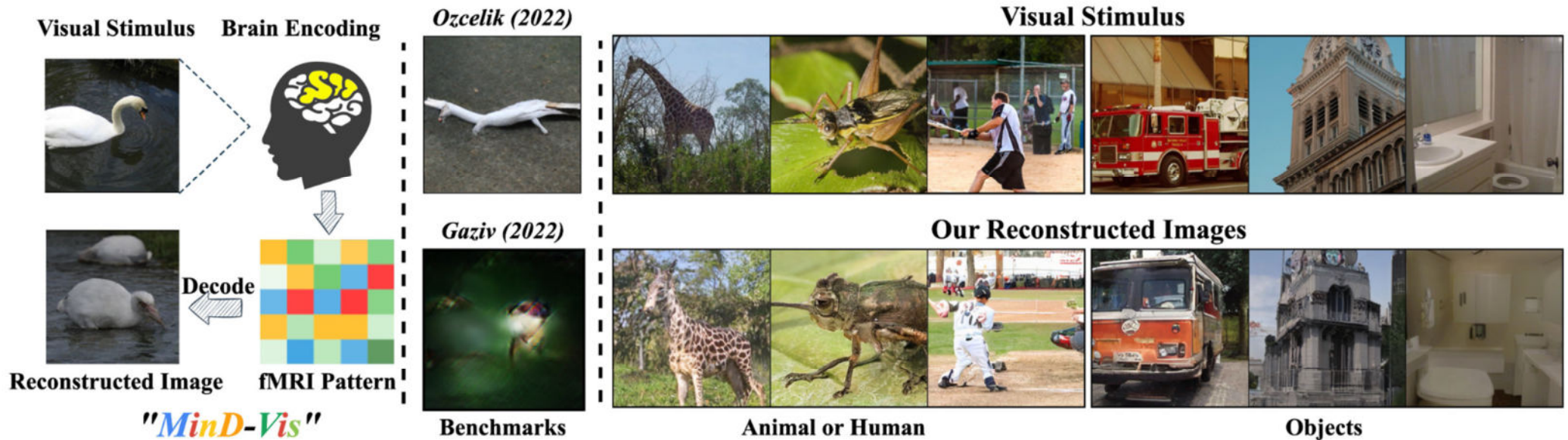
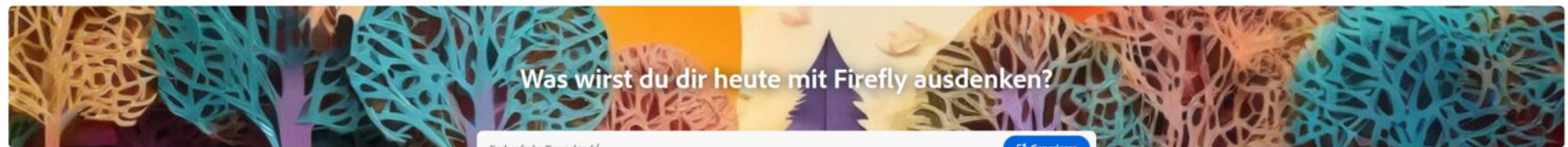


Figure 1. **Brain Decoding and Image Reconstruction.** For the first time, our proposed **MinD-Vis** is capable of decoding fMRI-based brain activities and reconstructing images with not only plausible details but also accurate semantics and image features (texture, shape, *etc.*), pushing this domain a considerable step forward. Left: Task overview. Middle: Comparison with benchmarks. Right: More reconstruction examples.

Adobe Firefly



Jetzt ausprobieren

Probiere die neueste generative KI aus und sag uns, was du denkst.



Text zu Bild

Erstelle Bilder aus einer detaillierten Beschreibung und beeinflusse den Stil mit einem Referenzbild.

Generieren



Generatives Füllen

Du kannst Gegenstände mit einem Pinsel entfernen oder sogar neue aus Textbeschreibungen malen.

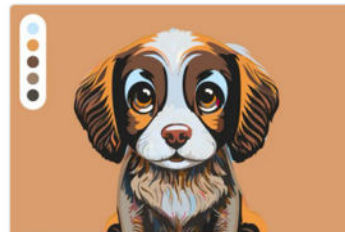
Generieren



Texteffekte

Wende Stile oder Texturen auf Text an, indem du sie beschreibst.

Generieren



Generative Neufärbung

Gib eine genaue Textbeschreibung ein und lass Adobe Firefly Farbvariationen deiner Vektorgrafik generieren.

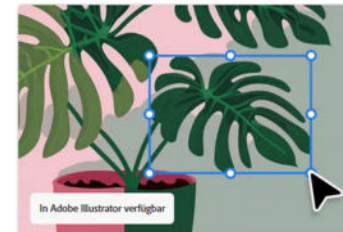
Generieren



Text zu Vorlage

Generiere bearbeitbare Vorlagen, indem du sie detailliert als Text beschreibst.

In Express testen



Text zu Vektorgrafik

Generiere SVG-Dateien, indem du sie detailliert als Text beschreibst.

In Adobe Illustrator testen

What A.I. art spiral images tell us about A.I. (and art) (Read 2023)



Sora (OpenAI 2024)

“We’re teaching AI to understand and simulate the physical world in motion, with the goal of training models that help people solve problems that require real-world interaction.”



Prompt: Reflections in the window of a train traveling through the Tokyo suburbs.

mehr...

Podcasts und Videokanäle

- ARD: Der KI-Podcast (<https://www.ardaudiothek.de/sendung/der-ki-podcast/94632864>)
- Deutschlandfunk: KI verstehen (<https://www.deutschlandfunk.de/ki-verstehen-102.html>)
- AI Explained (<https://www.youtube.com/@aiexplained-official>)

Blogs/Newsletter

- Jens Polomski: KI-Tool Newsletter (<https://jens.marketing/ki-newsletter>)
- Ethan Mollick: One Useful Thing (<https://www.oneusefulthing.org>)
- Matthias Kindt: KI & Bildung (<https://www.linkedin.com/newsletters/ki-bildung-7088522528528195584>)
- Zeit online: natürlich intelligent (<https://www.zeit.de/newsletter/natuerlich-intelligent/index>)
- Gary Marcus: Marcus on AI (<https://garymarcus.substack.com>)

Kurse und Materialien

- KI-Campus (<https://ki-campus.org>)
- Hochschulforum Digitalisierung (<https://hochschulforumdigitalisierung.de/qualifizierungsangebote>)
- Netzwerk Landeseinrichtungen für digitale Hochschullehre (<https://netzwerk-landeseinrichtungen.de/veranstaltungen>)
- Hochschuldidaktik Sachsen (<https://www.hd-sachsen.de/anmeldung#filterCategories=5>)

mehr...

- HOCHSCHULE >
- Service
 - Für Unternehmen
 - Für Medien
 - Hochschulbibliothek
 - Hochschuldidaktik ▾
 - Veranstaltungen
 - Beratung
 - Empfehlungen zum Umgang mit generativer KI**
 - Werkzeugkasten digitale Lehre >
 - Werkzeugkasten Hochschullehre >
 - Lehr-Lern-Projekte
 - 1-Minute-Paper
 - TAP und BILOE (Modulevaluation)
 - Thementag Gute Lehre >
 - Studierkompetenz >
 - Corporate Design
 - Hochschulshop
 - Historische Sammlung >

Empfehlungen zum Umgang mit generativer KI

„Der Umgang mit generativer KI an Hochschulen ist mit Unsicherheiten behaftet, die nicht zuletzt aufgrund der stetigen Weiterentwicklung generativer KI nie vollständig ausgeräumt werden können. Fakt ist: Generative KI Tools werden nicht verschwinden und in Hochschulen genutzt. Hochschulweite Leitlinien zum Umgang mit generativer KI können Orientierung bieten. Diese Leitlinien sollten dynamisch sein, um flexibel auf Veränderungen reagieren zu können.“ (Julius Friedrich, Projektleiter HFD)

Mit den Empfehlungen zum Umgang mit generativer KI soll Lehrenden an der WHZ die Nutzung von KI erleichtert werden. Struktur und Inhalte der Empfehlungen orientiert sich an dem [HFD-Blickpunkt „Leitlinien zum Umgang mit generativer KI“](#). Darin wurden KI-Leitlinien deutscher Hochschulen analysiert und wesentliche Elemente aufbereitet.

- Einstieg und Einordnung +
- Datenschutz und Urheberrecht +
- Kompetenzen +
- Lehr- und Lernaktivitäten +
- Prüfungen +
- KI-Zugänge -**

Die Westsächsische Hochschule Zwickau kann, wie die meisten Hochschulen, gegenwärtig keinen kostenfreien und datenschutzkonformen Zugang zu KI-Systemen anbieten. In einzelnen Struktureinheiten wird lediglich der Einsatz von Einzellizenzen für ChatGPT Plus erprobt. Darüber hinaus können Hochschulangehörige nicht dazu verpflichtet werden, sich bei KI-Systemen anzumelden. Die Nutzung von generativer KI kann nur freiwillig erfolgen.

Für eine freiwillige Nutzung eignen sich die kostenfreien Zugänge zu [Microsofts Copilot \(GPT-4\)](#), [Anthropics Claude 3](#) und [Googles Gemini](#). In allen Fällen ist eine Anmeldung erforderlich. Für Microsofts Copilot kann die Hochschul-E-Mail-Adresse verwendet werden (Anmeldung mit Geschäfts-, Schul- oder Unikonto) und es sollten der Unterhaltungsstil "Im höheren Maße Genau" ausgewählt werden. Da Anthropics Claude 3 noch nicht offiziell in Europa verfügbar ist, muss in der Registrierung eine E-Mail ohne ".de"-Endung angegeben werden. Außerdem sollte bei der Angabe der Telefonnummer die Region "international" ausgewählt werden.

Sollten Hochschulangehörige nach leistungsstärkeren, kostenpflichtigen KI-Systemen suchen, wird [OpenAIs ChatGPT Plus](#) und [Googles Gemini Advanced](#) empfohlen.

letzte Änderung am 18.03.2024

mehr...

Deep Learning (3Blue1Brown)



https://www.youtube.com/playlist?list=PLZHQObOWTQDNU6R1_67000Dx_ZCJB-3pi

VIELEN DANK FÜR DEN AUSTAUSCH



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WHZ/HDS

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