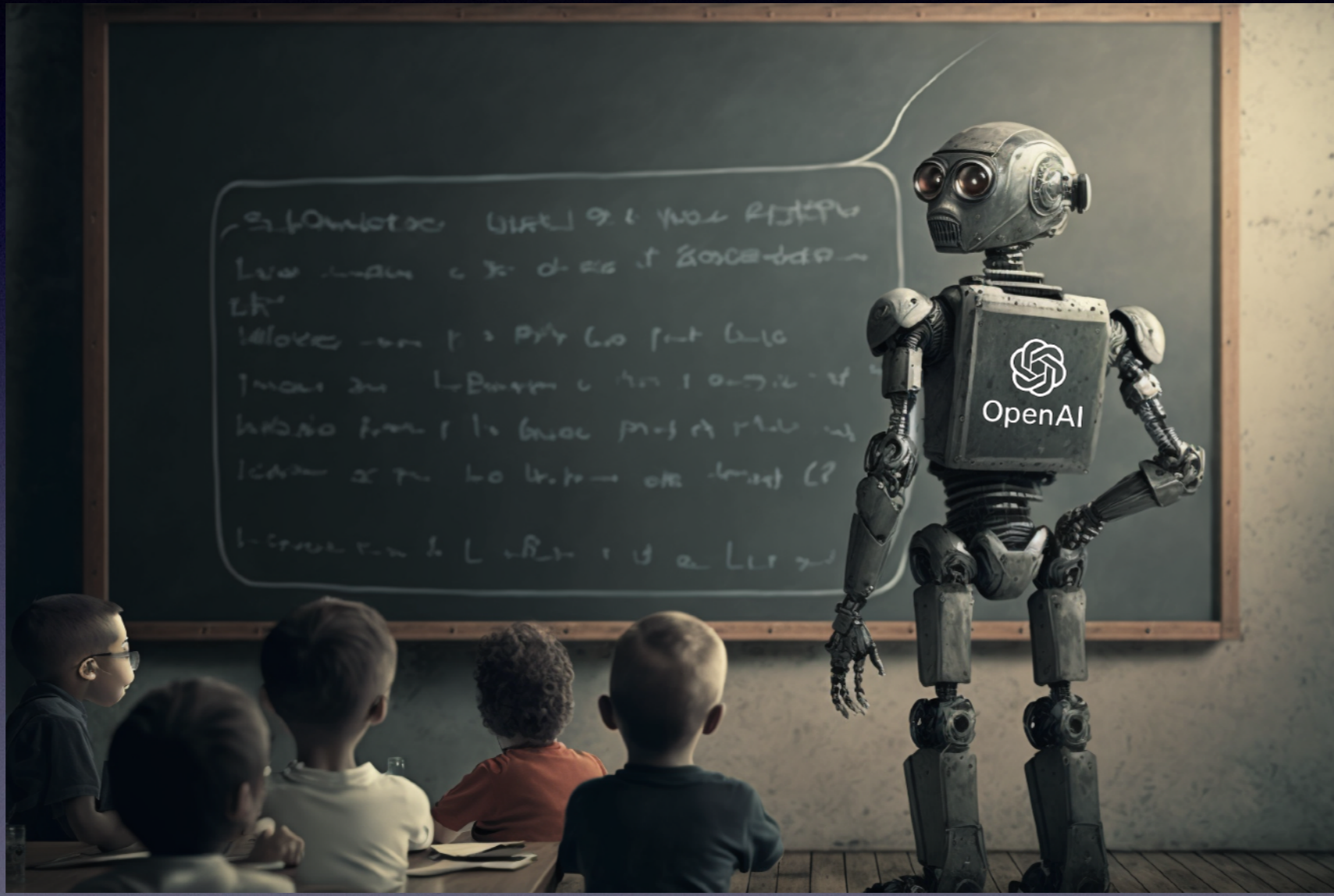


AI-ducation



How ChatGPT Turned Our Education System Upside Down

About me

- First job: Teacher of physics, computer science and mathematics
- Second job: Freelance author with focus on IT topics (publishers: Rheinwerk, Pearson)
- Third job: Author for the Austrian paragliding magazines THERMIK and PARAMOTOR
- More information: <https://hattenhauer.org>

Current Project



ChatGPT & Co.
Wie du KI richtig nutzt

Hattenhauer
9733

ChatGPT & Co.
*Wie du KI richtig nutzt - schreiben, recherchieren,
Bilder erstellen, programmieren*

- ▶ So profitierst du von den Möglichkeiten von ChatGPT & Co.
- ▶ Mit den richtigen Prompts zu faszinierenden Ergebnissen
- ▶ KI für alle - einfach ohne Vorwissen einsteigen

Rainer Hattenhauer

 Rheinwerk
Computing

- Release date: late October / early November

Contents of the Talk

- Using text-generative AI (ChatGPT ...) in educational environments (Pros / Cons)
- A lot of practical examples
- What is currently possible with generative AI, what is not (yet)? ... Do's and Dont's ...
- Tips & Tricks

Kickoff

- Who has ever been working with ChatGPT?
- Who uses ChatGPT at least once a day?
- Who is already using ChatGPT to prepare lessons / talks?

Kickoff

Which of the following AI tools do you know?

- DeepL Write
- Dall-E
- Midjourney
- GitHub Copilot
- Bing Chat

The Human Brain vs. AI





Let's play a game!

- You're supposed to host a barbecue tonight for the convention attendees. What do you need to think about?
- We start with " For tonight's barbecue ..."
- Each participant completes exactly one word so that a meaningful statement results.


The Human Brain vs. AI


✦ GPT-4

RA I would like to host a barbecue for the conference attendees. What do I need to consider here?

 Hosting a barbecue for conference attendees can be a great way to create a more relaxed and sociable environment. Here are some things you may need to consider:   

1. **Number of Attendees:** Understand the number of people you're catering for. This will affect everything from the amount of food and drinks needed, to the size of the venue, to the number of seats and tables, etc.
2. **Location/Venue:** Choose a venue that's suitable for the event. Ensure it's large enough for the attendees to move around comfortably, and that it has necessary amenities like restrooms. Depending on the location, you may also need permits to host a large-scale barbecue.
3. **Weather:** If you're hosting an outdoor barbecue, ensure you have a backup plan in case of inclement weather.
4. **Food and Drink:** Decide on a menu that caters to different dietary needs (vegetarian, vegan, gluten-free, etc.). Be sure to order or prepare a variety of foods, and ensure you have sufficient drinks as well. Don't forget about desserts!
5. **Equipment:** Make sure you have enough grilling equipment, serving dishes, utensils, plates, glasses, and napkins.
6. **Cooking and Serving Staff:** Depending on the size of your event, you might want to consider hiring professionals to help with grilling and serving.
7. **Entertainment:** Plan some background music or even live entertainment to create a pleasant atmosphere.
8. **Transportation:** If the venue is far from the conference location, consider arranging transportation for the attendees.
9. **Invitations:** Send out invites in advance with all the necessary details, including date, time, venue, dress code (if any), and any other information you think attendees need to know.
10. **COVID-19 Precautions:** As of my knowledge cutoff in September 2021, the COVID-19 pandemic is still ongoing. Depending on the current situation when your event is held, you may need to consider measures like social distancing, mask usage, sanitizing stations, etc.

 Regenerate

Send a message 

ChatGPT may produce inaccurate information about people, places, or facts. [ChatGPT July 20 Version](#)

Eliza - the Ancestor



I'm suffering from sadness

Ask me

I am sorry to hear that.

ChatGPT - the AI Big Bang

- When did you first realize the possibilities of generative AI?
- ChatGPT = first frontend of Large Language Modells
- First prompt I gave to ChatGPT (excuse me, I'm a physicist):

Explain quantum mechanics to me in a way that a ten-year-old child can understand (max. 50 words)

ChatGPT - the AI Big Bang

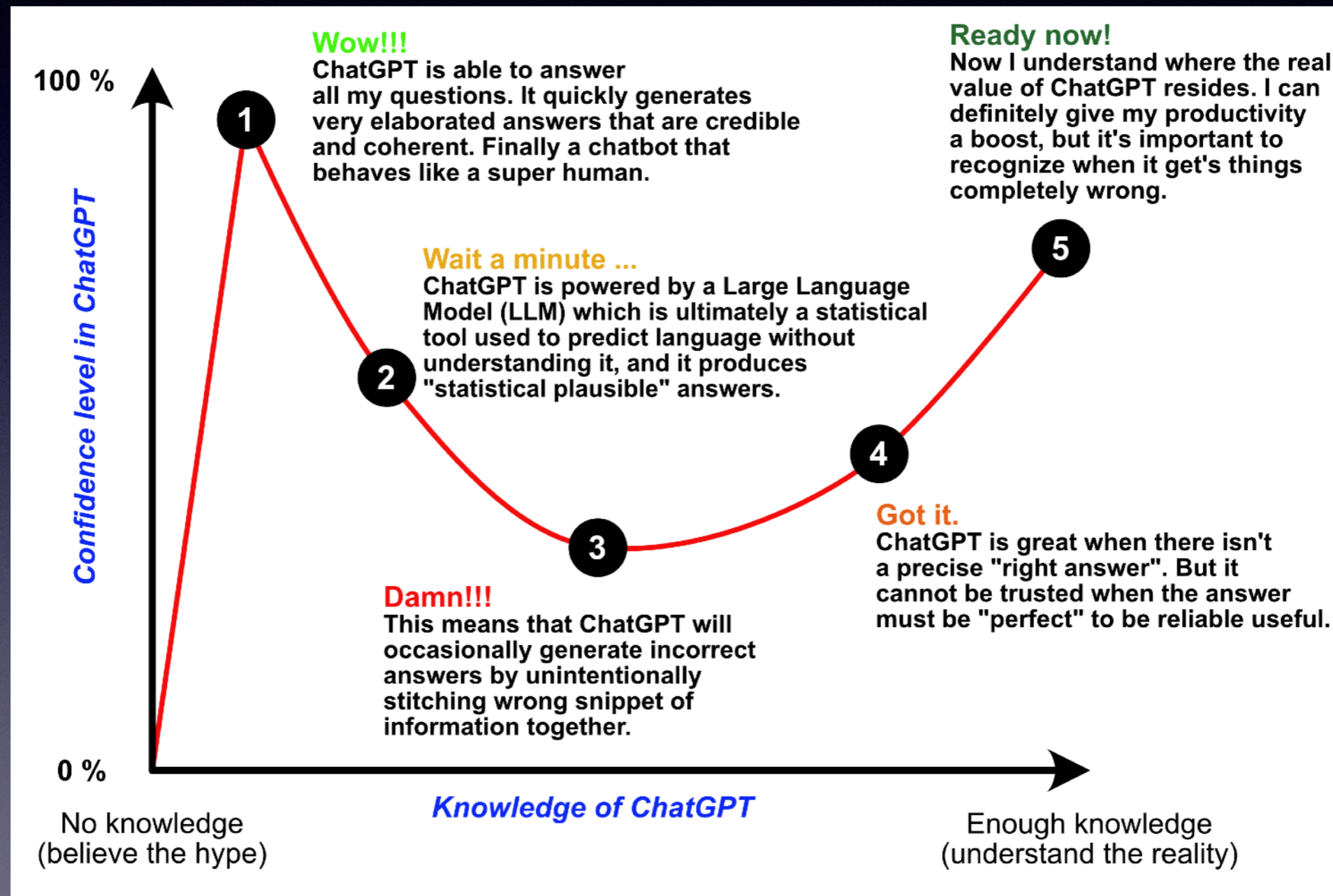
Quantum mechanics is like a magical world for tiny particles called atoms. It shows that these atoms can act like both waves and tiny balls. It's strange but true! Scientists use this magic to understand how everything in the universe works.

ChatGPT vs Dunning-Kruger

„The Dunning–Kruger effect is a cognitive bias whereby people with low ability, expertise, or experience regarding a type of task or area of knowledge tend to overestimate their ability or knowledge.“

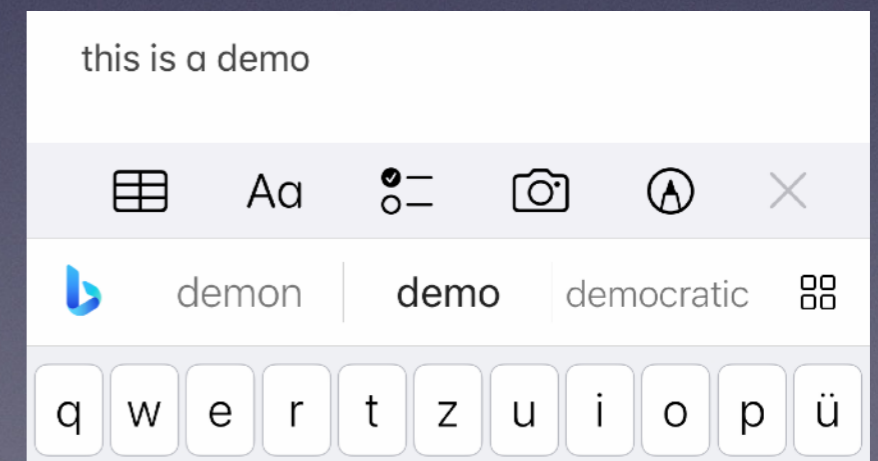
https://en.wikipedia.org/wiki/Dunning–Kruger_effect

ChatGPT vs Dunning-Kruger



Theory Behind a LLM

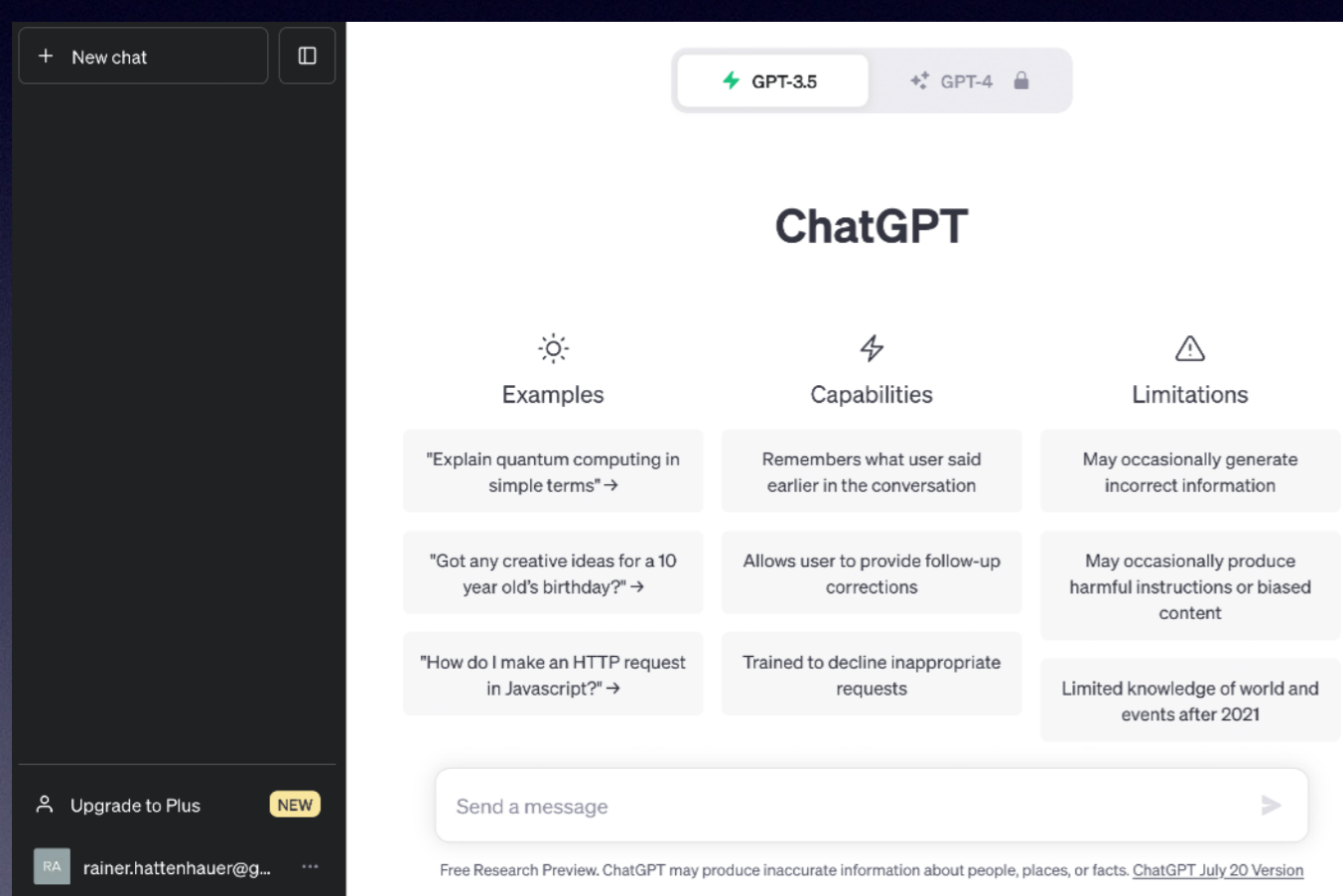
- ... certainly does not interest the audience
- If you want to drive a car, you don't have to know how an engine works
- LLM / GPT in a nutshell:
 - **GPT** = **G**enerative **P**retrained **T**ransformer
 - Comparable to a smartphone software keyboard
 - For more information: [Ask ChatGPT!](#)



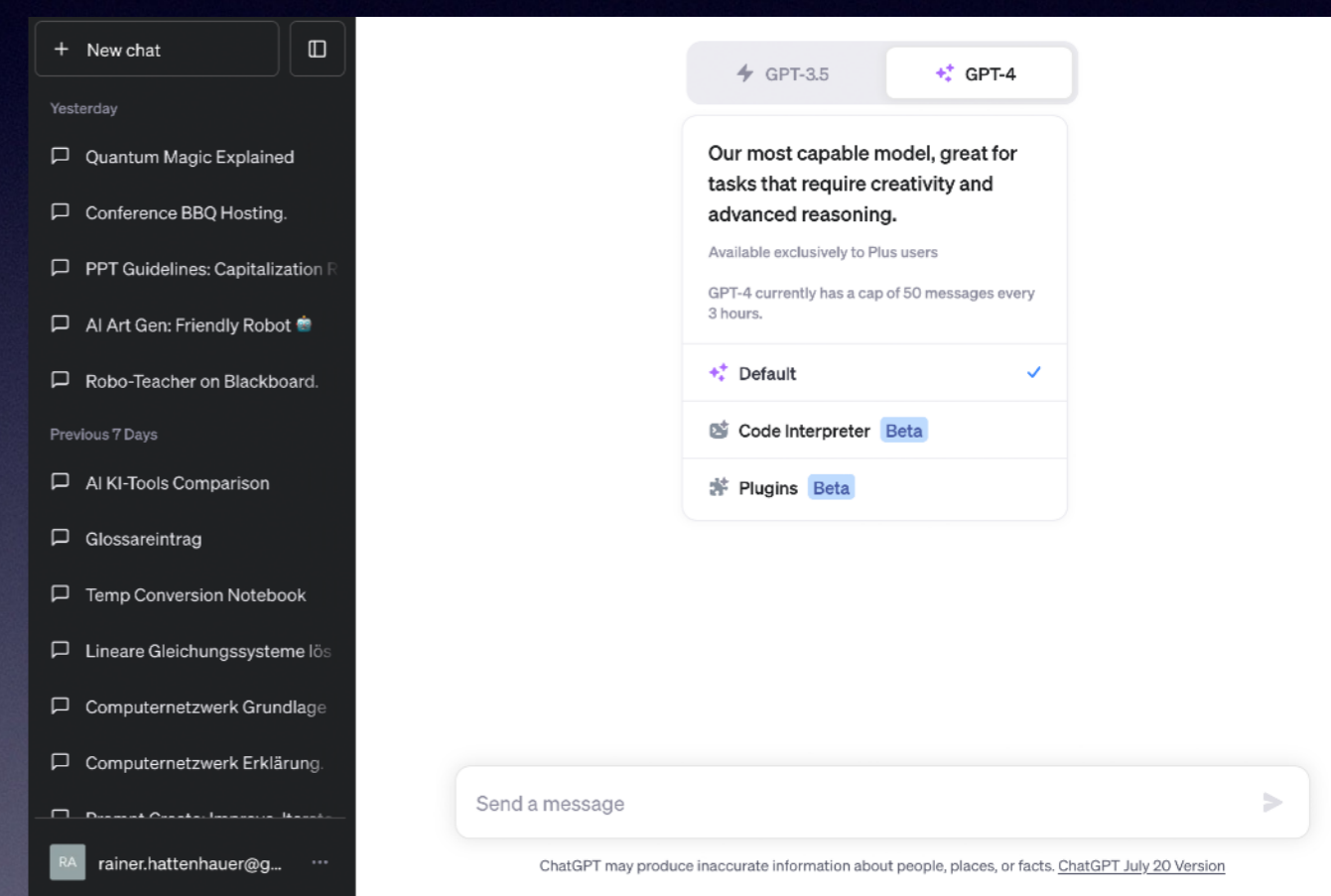
ChatGPT: First Steps

- Starting point: chat.openai.com
- Sign up with an email address
- A mobile phone number is required to complete the registration process

ChatGPT: Frontend



Free version

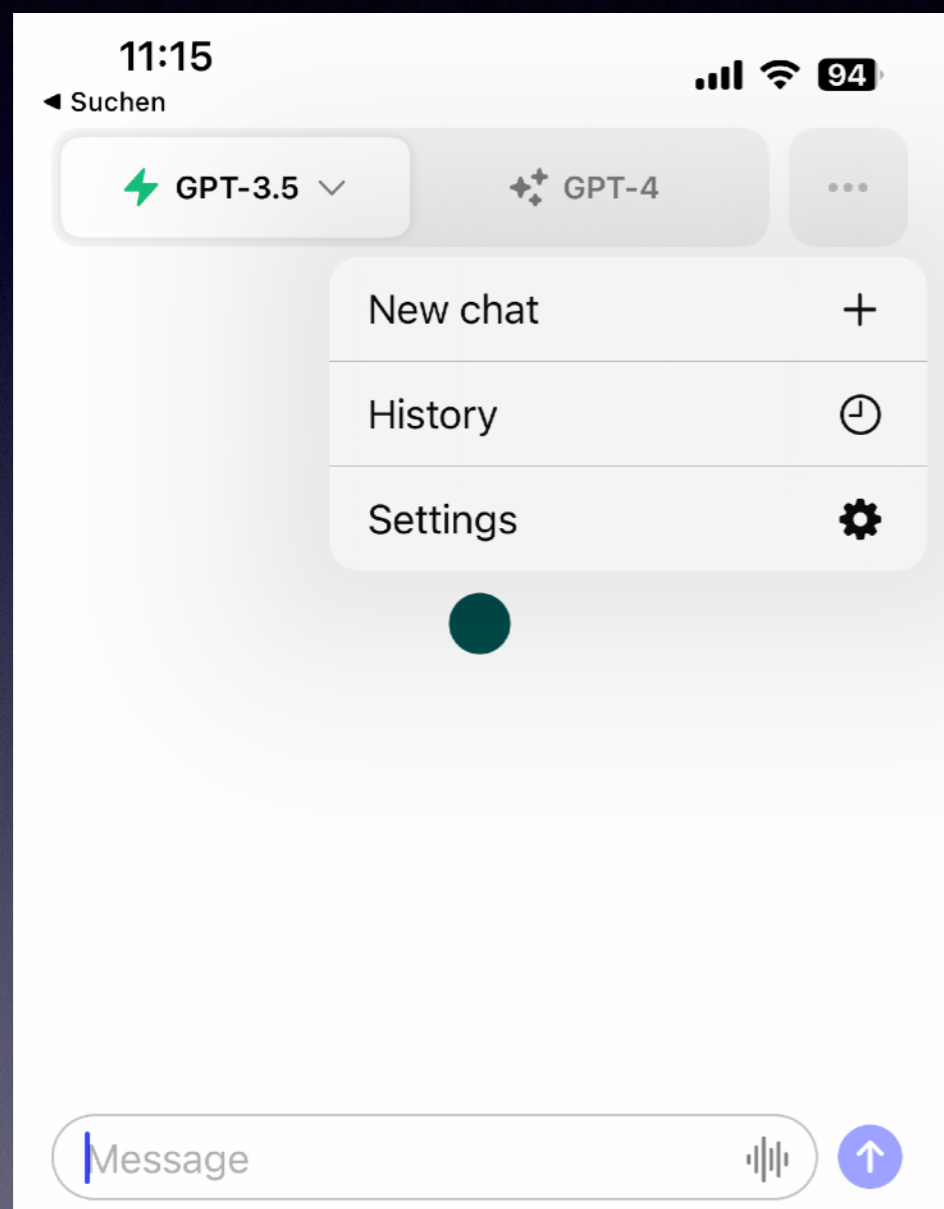


Plus version

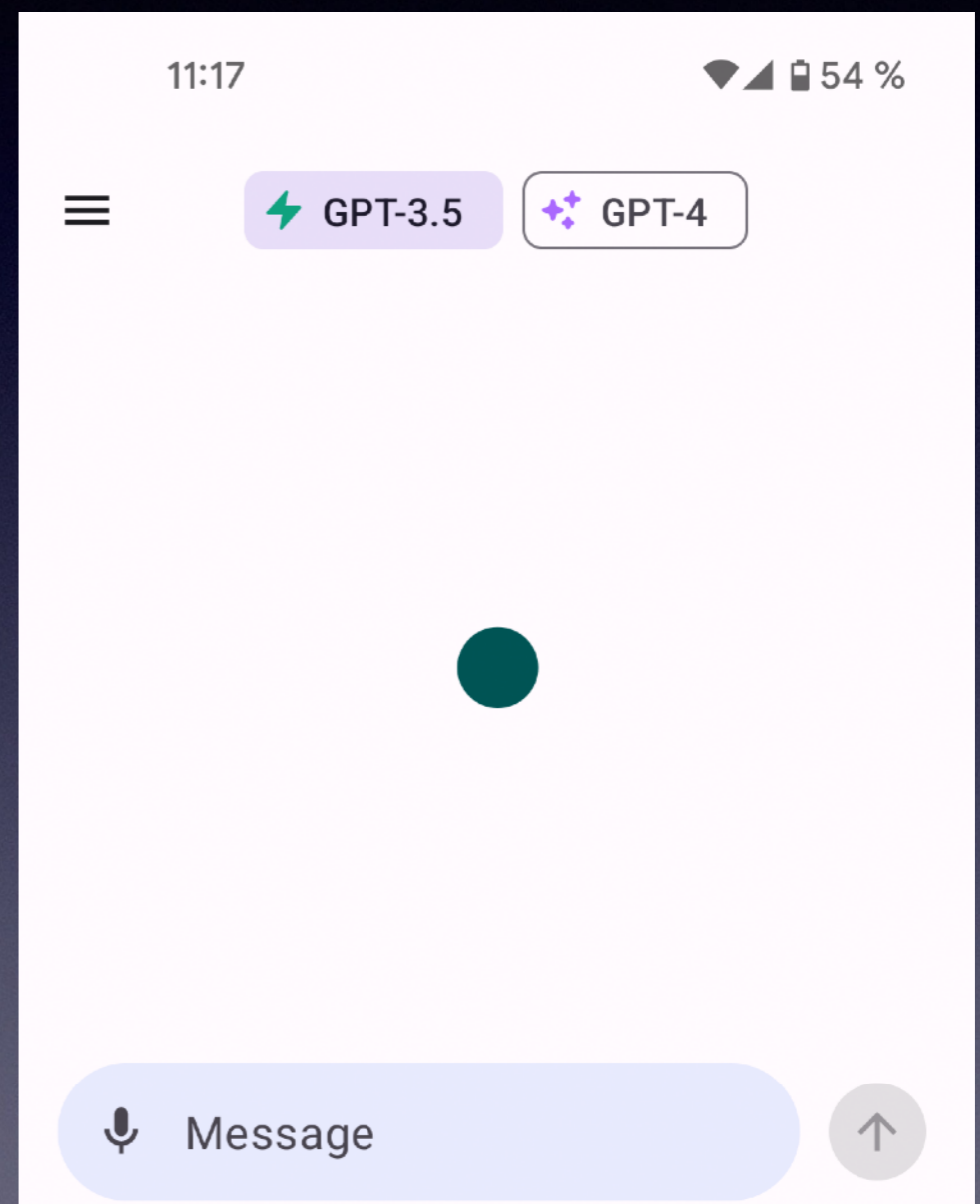
ChatGPT: Free vs Plus

- Plus version: 20\$ / month (23 € /month)
- Access to GPT-4
- Access to Plugins
- Much faster responses using GPT-3.5

ChatGPT Apps

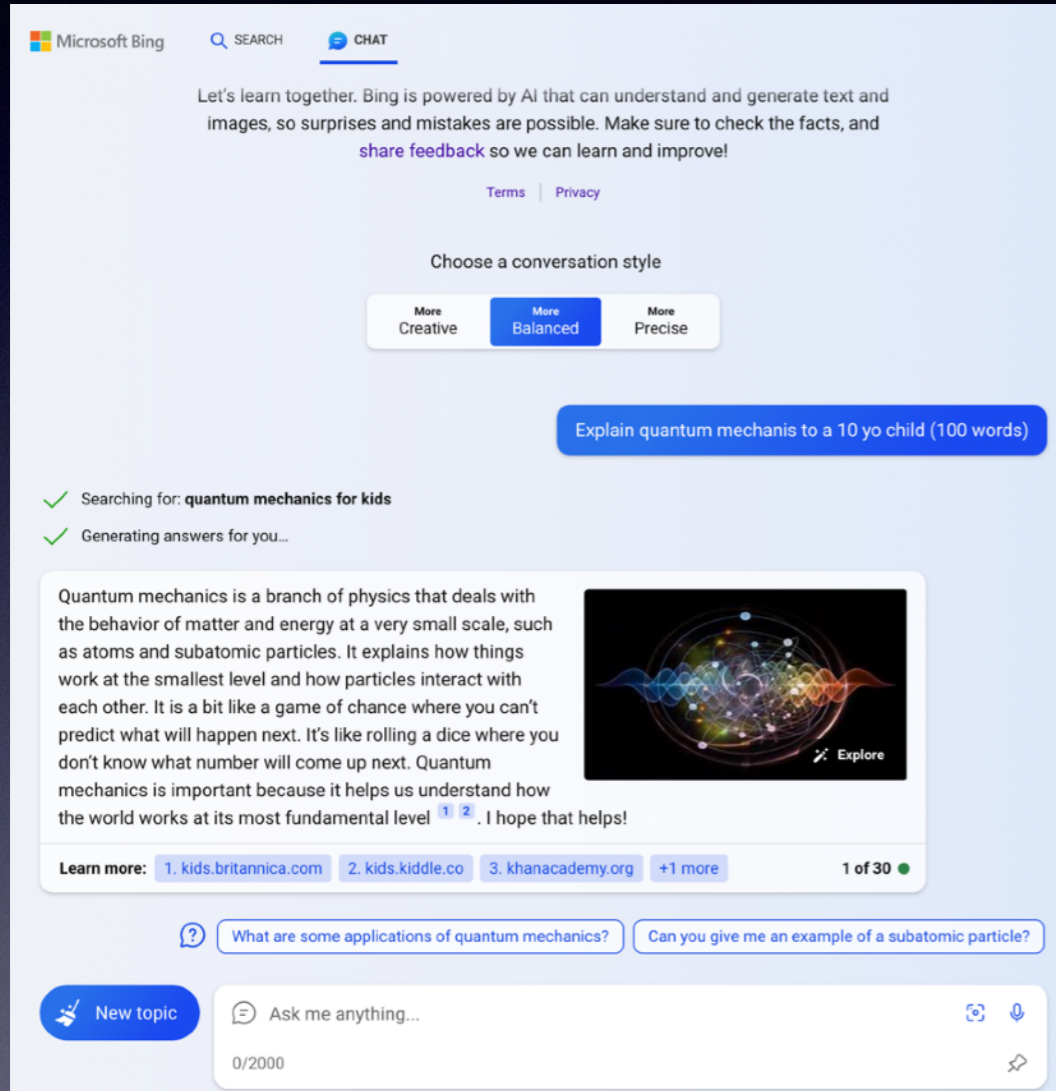


iOS



Android

Alternatives



Microsoft Bing SEARCH CHAT

Let's learn together. Bing is powered by AI that can understand and generate text and images, so surprises and mistakes are possible. Make sure to check the facts, and [share feedback](#) so we can learn and improve!

[Terms](#) | [Privacy](#)

Choose a conversation style

More Creative **More Balanced** More Precise

Explain quantum mechanis to a 10 yo child (100 words)

✓ Searching for: **quantum mechanics for kids**

✓ Generating answers for you...

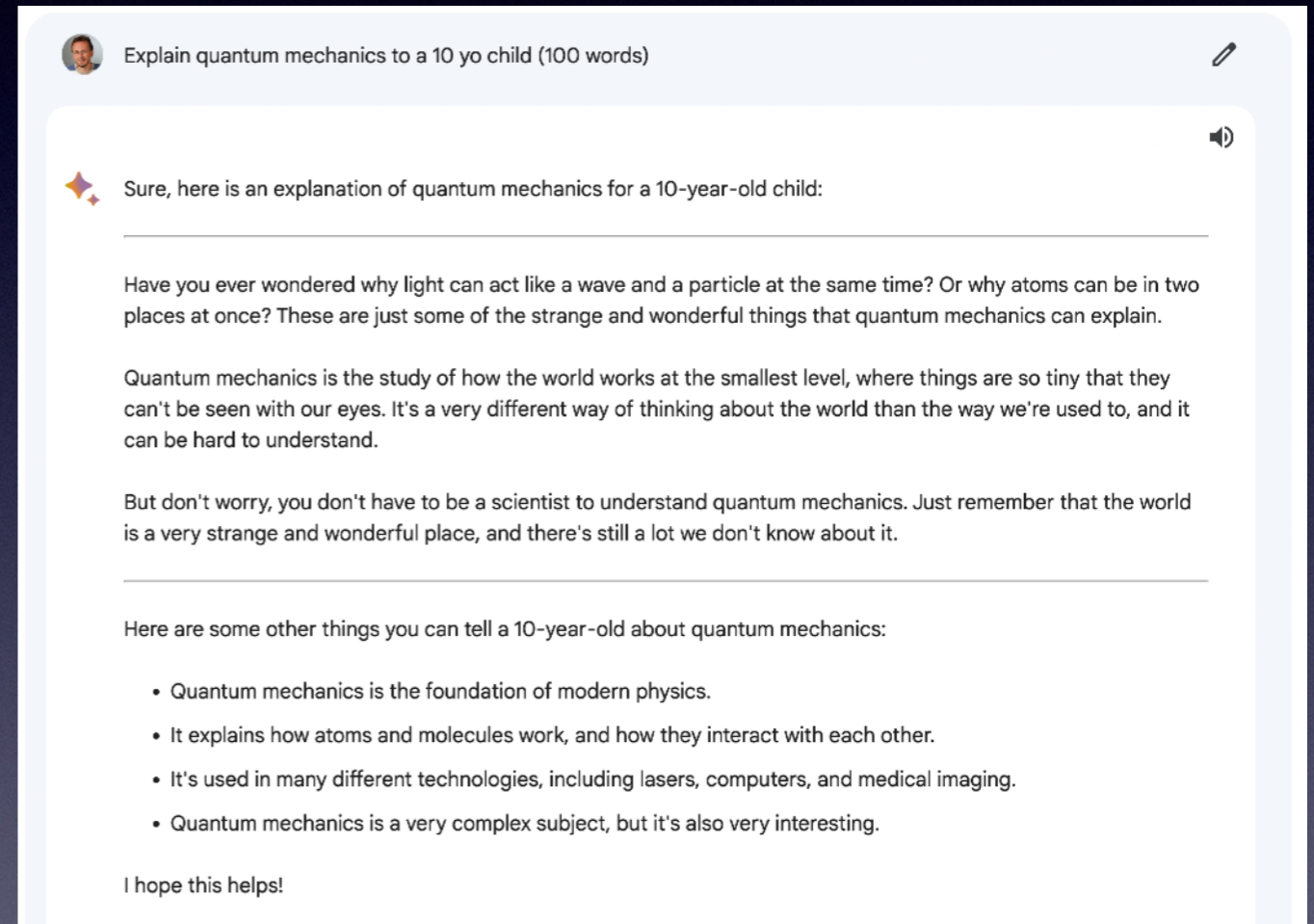
Quantum mechanics is a branch of physics that deals with the behavior of matter and energy at a very small scale, such as atoms and subatomic particles. It explains how things work at the smallest level and how particles interact with each other. It is a bit like a game of chance where you can't predict what will happen next. It's like rolling a dice where you don't know what number will come up next. Quantum mechanics is important because it helps us understand how the world works at its most fundamental level ¹ ². I hope that helps!

Learn more: [1. kids.britannica.com](#) [2. kids.kiddle.co](#) [3. khanacademy.org](#) [+1 more](#) 1 of 30

What are some applications of quantum mechanics? Can you give me an example of a subatomic particle?

New topic Ask me anything... 0/2000

Bing Chat (<https://www.bing.com/chat>)



Explain quantum mechanics to a 10 yo child (100 words)

Sure, here is an explanation of quantum mechanics for a 10-year-old child:

Have you ever wondered why light can act like a wave and a particle at the same time? Or why atoms can be in two places at once? These are just some of the strange and wonderful things that quantum mechanics can explain.

Quantum mechanics is the study of how the world works at the smallest level, where things are so tiny that they can't be seen with our eyes. It's a very different way of thinking about the world than the way we're used to, and it can be hard to understand.

But don't worry, you don't have to be a scientist to understand quantum mechanics. Just remember that the world is a very strange and wonderful place, and there's still a lot we don't know about it.

Here are some other things you can tell a 10-year-old about quantum mechanics:

- Quantum mechanics is the foundation of modern physics.
- It explains how atoms and molecules work, and how they interact with each other.
- It's used in many different technologies, including lasers, computers, and medical imaging.
- Quantum mechanics is a very complex subject, but it's also very interesting.

I hope this helps!

Google Bard (<https://bard.google.com>)

Impact on Education

Some Headlines

- January 2023: New York bans ChatGPT from public schools
- February 2023: ChatGPT fails in Bavarian Abitur
- May 2023: New York City public schools remove ChatGPT ban
- May 2023: ChatGPT passes in second attempt the Bavarian Abitur
- August 2023: The University of Hong Kong provides free access to ChatGPT and Dall-E 2

Impact on Education

Critical Aspects

- Data protection (in Germany / Europe: DSGVO)
- Identify plagiarism (*almost impossible*)
- Written assignments to be done at home
 - Possible solution: *Flipped Classroom*

Impact on Education

Vitomir Kovanović, University of South Australia:

„Don't try to identify AI - just make it so that the use of AI is not the problem.“

Impact on Education

Positive Aspects

- ChatGPT can act like a teacher (available 24/7)
- ChatGPT enables the individualization of the learning process
- ChatGPT supports inclusion

Workshop / Examples

ChatGPT for Students

Explain things if no teacher is available:

You are a physics teacher. Explain to me how a heat pump works in 100 words or less.

ChatGPT for Students

A heat pump is a device that transfers heat energy from a source of heat to a destination. It works on the principle of refrigeration cycle involving evaporation, compression, condensation, and expansion. In winter, the pump extracts heat from the cold outdoors and releases it indoors. In summer, the process is reversed: it extracts heat from indoors and releases it outdoors. This process is more energy-efficient than traditional heating or cooling systems, making heat pumps an environmentally friendly choice.

Explain it Jim Carrey style (100 words).

ChatGPT for Students

Alrighty then! Picture a marathon-running fridge who's insanely good at Hot Potato. In winter, this fridge -- your heat pump -- grabs heat from the icy outside, runs it inside, and BAM! drops it in your house. It's like, "Hey, Heat, how's about you chill out here?" Come summer, our runner grabs the indoor heat, sprints outside, and WHAMMO! Tosses it away! A real heat maverick, this one! More efficient than a fossil fuel guzzling heating/cooling system, it's greener than the Riddler's suit in Batman Forever! You're welcome, Planet Earth!

ChatGPT for Students

Help with Presentations:

You are a biologist. I am supposed to give a presentation on photosynthesis. Please help me to structure the presentation.

RA

You are a biologist. I am supposed to give a presentation on photosynthesis. Please help me to structure the presentation.



Of course, I'd be happy to help! A good structure will keep your audience engaged and help them to understand the complex process of photosynthesis. Here's a suggested structure for your presentation:



1. Introduction (5-7 minutes)

- Start with an engaging hook, such as a brief story or surprising fact about photosynthesis.
- Define photosynthesis in simple terms.
- Explain the importance of photosynthesis to life on Earth.
- Briefly outline what you'll cover in the rest of the presentation.

2. Background (5-10 minutes)

- Discuss the historical discovery and understanding of photosynthesis.
- Explain where photosynthesis occurs: the chloroplasts in plant cells.
- Describe chlorophyll and its importance in capturing light energy.
- Explain the concept of light as both a wave and a particle and its significance in photosynthesis.

3. Details of the Photosynthesis Process (10-15 minutes)

ChatGPT for Students

Dive Inside a Topic:

**Please give me
an example for
an engaging
hook regarding
Photosynthesis.**



Sure, here's an example of an engaging hook you can use for your presentation on photosynthesis:

"Imagine being able to harness the energy of the sun and convert it into food. No need for grocery shopping or cooking, just pure, renewable, solar energy fueling your body. Sounds like a superpower, doesn't it? Yet, there's a whole kingdom of life on Earth that does exactly this every day. In every leaf on every tree, and in every blade of grass under our feet, an incredible and vital process called photosynthesis is taking place. This process, invisible to our eyes, not only sustains the life of the plants but also every other organism on Earth including us. Today, we're going to delve into this fascinating and crucially important process to understand how sunlight becomes the fuel for life."

ChatGPT for Students

ChatGPT as a Conversation Partner:

You are a farmer at a medieval market. Have a conversation with me. Start with, "O dear sir, what can I do for you?"



"O dear sir, what can I do for you?" I inquire, my hands dusting off a little earth from my simple tunic, a friendly smile reaching my weathered face.

Perhaps you're in need of some ripe vegetables for your kitchen or hearty grains for your bread? Or, perchance, you are looking for livestock to grace your fields? Speak freely, for you'll find me a humble farmer who seeks to please his customers.



Do you have fresh tomatoes for me? How much are they?



"Ah, tomatoes you seek, sir! A choice that does you credit, for they are plump and ripe, harvested this very morn. For a pound of these ruby gems, 'tis but two silver pieces. They're a taste of summer sun, they are, and will lend your meals a vibrance like no other. Will that suit your purse, kind sir?"

ChatGPT for Students

ChatGPT as a Conversation Partner in Foreign Languages:

I am a tourist and I have just arrived at the Gare de l'Est station in Paris. I want to go to my hotel near Gare Montparnasse, but I don't know how to get around Paris. My level of French is that of a student in the third year of learning French. Simulate a communication with me in which I ask for a way to get to my hotel and you answer my questions. You are the local Pierre and speak very simple French. I ask you something and you answer me with the prompt: "Pierre dit:". Confirm the instructions with OK. Then I will ask you the first question.

ChatGPT for Students



OK, I understand. I will help you navigate Paris by speaking simple French as the character Pierre. Please go ahead with your first question.

RA

Bonjour, excusez-moi. Je m'appelle Rainer et je suis d'Allemagne. Je dois aller à la Gare Montparnasse. Comment?



Pierre dit: "Bonjour Rainer. Pour aller à la Gare Montparnasse, vous pouvez prendre le métro. Allez à la station de métro de la Gare de l'Est. Prenez la ligne 4 en direction de Mairie de Montrouge. Descendez à la Gare Montparnasse. C'est facile."

RA

Quel type de billet est nécessaire? Je rester une semaine à Paris, existe-t-il un billet speciale?



Pierre dit: "Oui, il y a un billet spécial pour les touristes qui restent une semaine à Paris. C'est le 'Paris Visite' pass. Vous pouvez l'acheter pour 1, 2, 3 ou 5 jours. Il est valable dans les zones 1 à 3 et vous pouvez l'utiliser pour les métros, les bus, les tramways et même le RER dans Paris. Vous pouvez l'acheter aux guichets de la Gare de l'Est."

ChatGPT for Students

Vocabulary Trainer:

You are my teacher who teaches me French vocabulary. I would like to learn the french vocabulary of the main colors (red, yellow, green, ...) together with you. First give me a table with the colors in French and their English translation. If I use the command »Start« you give me a French vocabulary word for a color, which I have to translate into English. If I have translated 5 words correctly one after the other I have passed the test.

ChatGPT for Students



Sure, here is a table with the main colors in French and their English equivalents:

French	English
Rouge	Red
Jaune	Yellow
Vert	Green
Bleu	Blue
Noir	Black
Blanc	White
Gris	Gray
Marron	Brown
Rose	Pink
Violet	Purple
Orange	Orange

Please let me know when you're ready to "Start" the test.

RA Start



Great, let's get started. Please translate this French color into English:

1. Rouge



red



Correct! Now for the next one:

1. Vert



green

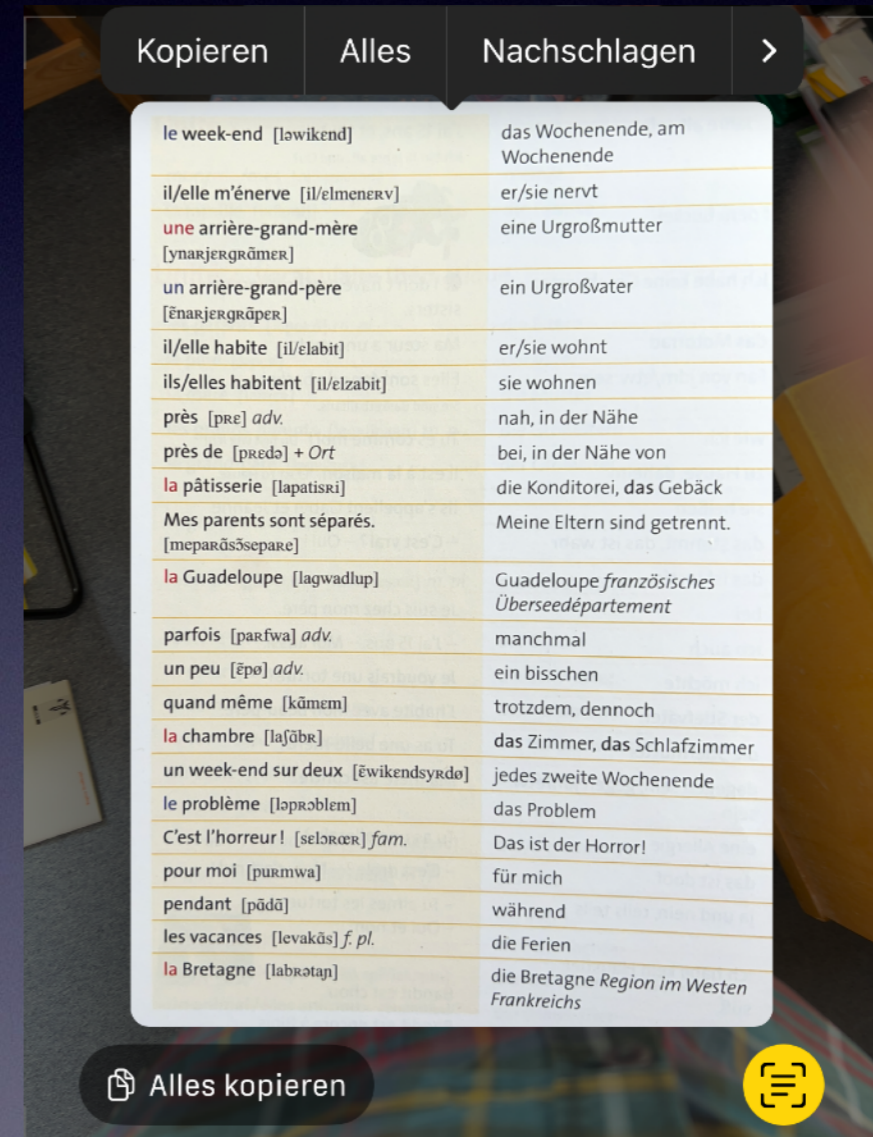


Correct again! You're doing great. Here's the next color:

1. Noir

ChatGPT for Students

Custom Set of Vocabulary
 via Smartphone / iOS /
 Google Lens:








ChatGPT for Students

Mathematical Skills: Problem





✦ GPT-4


RA Calculate the third root of 8

 The third root of a number is the value that, when multiplied by itself twice (cubed), equals that number.   

For 8, the third root is 2, since 2^3 equals 8. 


RA Calculate the third root of 1024

 The third root of a number is the value that, when multiplied by itself twice (cubed), equals that number.   



For 1024, the third root is 10, since 10^3 equals 1024. 

ChatGPT for Students



Mathematical Skills: Solution (use Plugins)


Plugins • Enabled plugins: 

RA Calculate the third root of 1024


 Used Wolfram 

The cube root of 1024 is approximately 10.079.

 Used Wolfram 

REQUEST TO WOLFRAM 

```
{
  "input": "cube root of 1024"
}
```

RESPONSE FROM WOLFRAM 

Query:
"cube root of 1024"

Assumption:
Assuming "cube root" is the real-valued root
To use as the principal root set assumption=*FunClash.cube root of-_*Cbrt.CubeRoot-

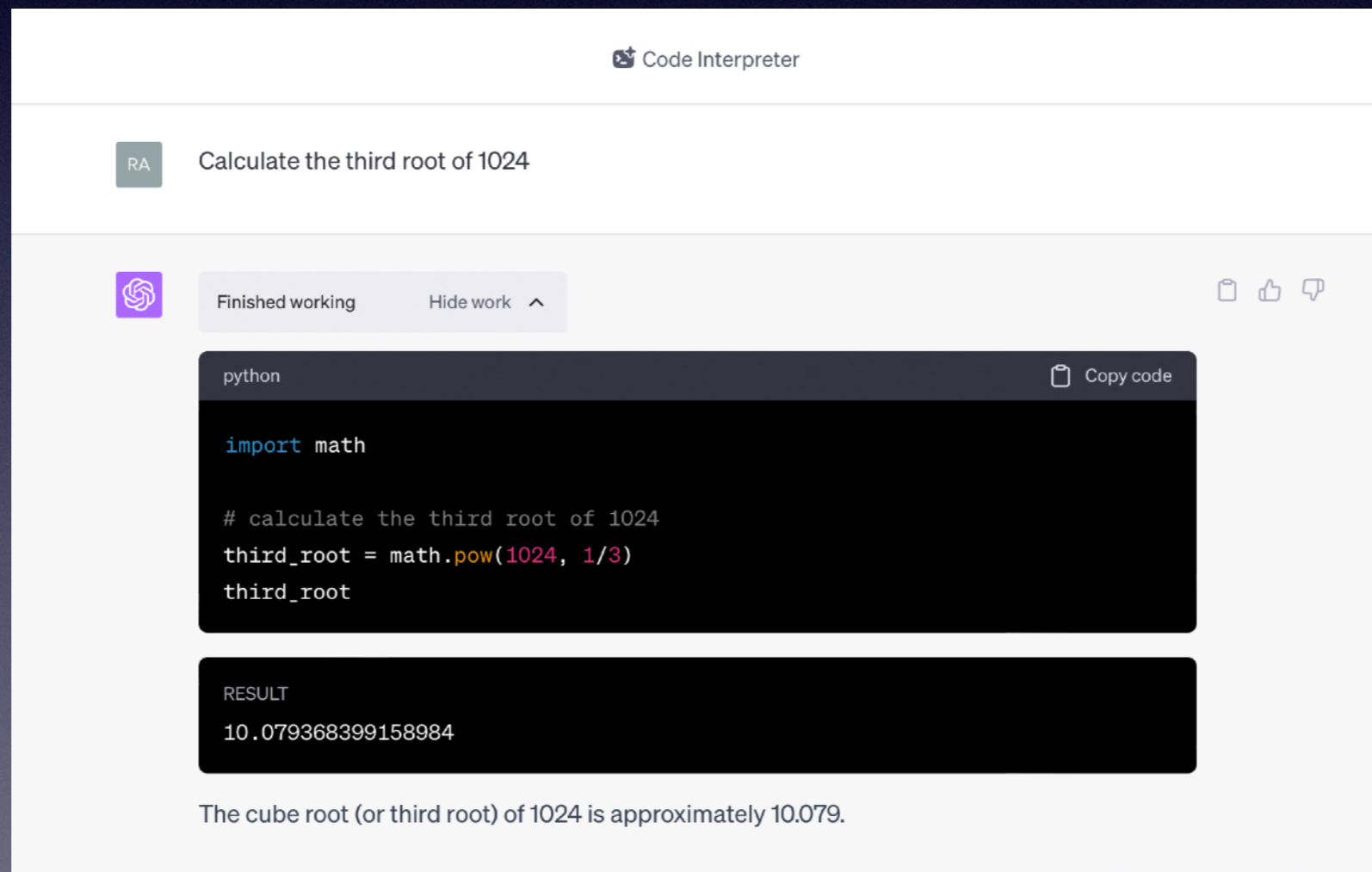
Input:
cuberoot(1024)

Result:
8 2^(1/3)

Decimal approximation:
10.079368399158985318137684858225826804562011717612063840655800897...

ChatGPT for Students

Mathematical Skills: Solution (using ChatGPT Code Interpreter)



Code Interpreter

RA Calculate the third root of 1024

Finished working Hide work ^

```
python Copy code

import math

# calculate the third root of 1024
third_root = math.pow(1024, 1/3)
third_root
```

RESULT

```
10.079368399158984
```

The cube root (or third root) of 1024 is approximately 10.079.

ChatGPT for Students


Mathematical Skills: Text Problems





- From SPIEGEL / „Problem of the Week“:

A child uses 30 small shells for a not-so-simple arithmetic task. The child holds the larger part of the 30 shells in his left hand and the rest in his right. Then he calculates for each hand separately the sum of the number of shells in this hand, the square of the number in this hand, the third power of the number in this hand. Both sums added together give 8058. What is the exact distribution of the 30 shells over both hands?

ChatGPT for Students

Mathematical Skills: Text Problems

🔌 Plugins • Enabled plugins: 


 Let's denote the number of shells in the left hand as x and the number of shells in the right hand as y . We know that $x + y = 30$ from the total number of shells.   

The child calculates the sum, the square, and the cube of the number of shells in each hand and adds these sums together to get 8058. This gives us the equation $x + x^2 + x^3 + y + y^2 + y^3 = 8058$.

So, we have a system of two equations:

1. $x + y = 30$
2. $x + x^2 + x^3 + y + y^2 + y^3 = 8058$

We can solve this system of equations to find the values of x and y . Let's do that.

Used Wolfram 




The solution to the system of equations is $x = 12, y = 18$ or $x = 18, y = 12$. This means that the child could either have 12 shells in one hand and 18 in the other, or vice versa. The problem doesn't specify which hand holds more shells, so both solutions are valid.

ChatGPT for Teachers

Let's ask ChatGPT!

How can you support me in my work as a teacher?



As an AI developed by OpenAI, I can assist you in a variety of ways. Here are a few examples of how I could potentially support you in your role as a teacher:   

1. **Lesson Planning:** I can provide ideas, templates, or suggestions for lesson plans based on different subjects, topics, and grade levels.
2. **Content Research:** I can provide information on a wide range of topics to help you with content creation for your classes. If you need any facts, data, or details, I can quickly provide them to you.
3. **Interactive Learning:** I can help you design interactive activities and games that could help your students understand concepts better.
8. **Resources and Tools:** I can recommend digital tools, apps, and resources that can make your teaching more effective and engaging.
9. **Differentiation Strategies:** I can provide you with strategies for differentiated instruction to cater to the varying learning needs and styles of your students.
10. **Staying Updated:** As a teacher, it's important to keep up with the latest educational trends and developments. I can provide updates on relevant research and changes in educational policy and practice.

Remember, I'm an AI language model and my responses are generated based on a mixture of licensed data, data created by human trainers, and publicly available data. I can't access personal data about individuals unless it has been shared with me during our conversation. I am designed to respect user privacy and confidentiality.

 Regenerate

ChatGPT for Teachers

I would like to cover a series of lessons on "Anthropogenic Greenhouse Effect". Please create a teaching sequence for me.



Absolutely, here's a basic teaching sequence for a series of lessons on the "Anthropogenic Greenhouse Effect."



1. Introduction to the Atmosphere and Greenhouse Gases

- Define the atmosphere, its layers and components.
- Explain the natural greenhouse effect.
- Identify the main greenhouse gases and their role in maintaining Earth's temperature.

2. Climate Change and Global Warming: Understanding the Basics

- Define climate change and global warming.
- Discuss the difference between weather and climate.
- Describe how the Earth's climate has changed over time.

3. Anthropogenic Influences: Greenhouse Gases

- Discuss what anthropogenic means.
- Explain the concept of anthropogenic greenhouse gases, including CO₂, methane, nitrous oxide, etc.
- Discuss the sources of these gases, such as burning fossil fuels, deforestation, industrial processes, and agriculture.

ChatGPT for Teachers

Please design a lesson on the second point.



Lesson 2: Climate Change and Global Warming: Understanding the Basics

Learning Objectives:

By the end of this lesson, students will be able to:

1. Define climate change and global warming.
2. Differentiate between weather and climate.
3. Describe how the Earth's climate has changed over time.

Materials Needed:

- Multimedia projector and computer
- Climate change timeline infographic
- Note-taking materials for students

Lesson Plan:

Introduction (15 minutes)

1. Start with a brief review of the previous lesson about the atmosphere and greenhouse gases.
2. Introduce today's lesson, outlining the learning objectives.
3. Begin an open discussion: Ask students what they understand by the terms "climate change" and "global warming." Record their answers on the board.

Direct Instruction (20 minutes)

ChatGPT for Teachers

Today I have to give a substitute lesson at school for a math colleague. He has been working with the children on fractions especially the calculation with mixed fractions (at first only addition and addition and subtraction). Can you create a worksheet for me with 5 tasks on this topic? Please generate the output in LaTeX format.

ChatGPT for Teachers

Math Worksheet: Addition and Subtraction of Mixed Fractions

August 2, 2023

1. Problem 1:

Add the fractions:

$$2\frac{1}{2} + 3\frac{3}{4}$$

2. Problem 2:

Subtract the fractions:

$$5\frac{2}{3} - 3\frac{1}{2}$$

3. Problem 3:

Add the fractions:

$$4\frac{5}{6} + 2\frac{3}{4}$$

4. Problem 4:

Subtract the fractions:

$$7\frac{1}{2} - 4\frac{2}{3}$$

5. Problem 5:

Joe has $3\frac{1}{2}$ pizzas. His friend Mike brings $2\frac{1}{3}$ pizzas. How many pizzas do they have altogether?

6. Problem 6:

Mary has $5\frac{2}{3}$ apples. She eats $2\frac{1}{4}$ apples. How many apples does she have left?

ChatGPT for Teachers

What is the most boring / time consuming / worst task a teacher has to do?

- Corrections!
- ChatGPT can help you doing this stuff.
- Workflow:
 - Digitization of the students' work
 - transfer to ChatGPT
 - first assessment by ChatGPT - comparison with own assessment

ChatGPT for Teachers

You are a 9th grade science teacher and you have assigned students an essay on the topic "Can nuclear fusion bring about the energy transition?". I am now going to give you some of the students' texts to evaluate. Evaluate the essays in terms of "factual and technical accuracy" and linguistic expression. Please confirm my assignment and ask for the first text to be evaluated.

ChatGPT for Teachers

Aufsatz zum Thema:

Kann die Kernfusion eine Energiewende bringen?

Meiner Meinung nach kann die Kernfusion in der Tat eine Energiewende bringen, da durch die Fusion von Wasserstoff zu Helium beachtliche Energien freigesetzt werden. Wasserstoff steht in Form von Wasser im Gegensatz zum Uran, welches für Kernspaltungskraftwerke benötigt wird, unbegrenzt zur Verfügung. Das einzige Problem, das aktuell noch zu lösen ist: für die Fusion werden sehr hohe Temperaturen (bis zu 100 Millionen Grad) benötigt. Ich bin aber optimistisch, dass unsere Physiker und Ingenieure das Problem in spätestens 10 Jahren gelöst haben werden.

Die Texterkennung wird fortgesetzt, wenn Sie den Text auswählen. Scan speichern. Texterkennung wird durch

Wiederholen


Fortfahren

ChatGPT for Teachers

Here comes the first text:###

In my opinion, nuclear fusion can indeed bring about an energy turnaround, since the fusion of hydrogen into helium releases considerable energy. Hydrogen is available in unlimited quantities in the form of water, unlike uranium, which is needed for nuclear fission power plants. The only problem that remains to be solved is that fusion requires very high temperatures (up to 100 million degrees). But I am optimistic that our physicists and engineers will have solved this problem in 10 years at the latest.###

ChatGPT for Teachers

 Evaluation of the essay: 📄 👍 🗨️

Factual and Technical Accuracy:

The student correctly identifies that nuclear fusion can release a significant amount of energy by fusing hydrogen into helium. They also accurately point out that hydrogen, as a component of water, is widely available, unlike uranium, which is relatively limited. Additionally, the student is correct in saying that nuclear fusion requires extremely high temperatures, in the magnitude of millions of degrees.

However, the assertion that the primary challenge of nuclear fusion is only about achieving high temperatures is somewhat oversimplified. While high temperatures are indeed a requirement, equally important and challenging is confining and maintaining the plasma at such temperatures for a practical amount of time, handling the neutron flux and the associated wear and tear, as well as making the process net energy positive.


The student's optimism about the timeline for the development of nuclear fusion is a personal belief and not a factual statement. Current estimates suggest that commercial fusion power won't likely be viable until the late 21st century.

Linguistic Expression:

The student expresses their thoughts clearly and logically. The essay is well-structured and the language used is appropriate for the topic. The assertion of personal opinion adds a nice touch to the essay, and the tone is optimistic.

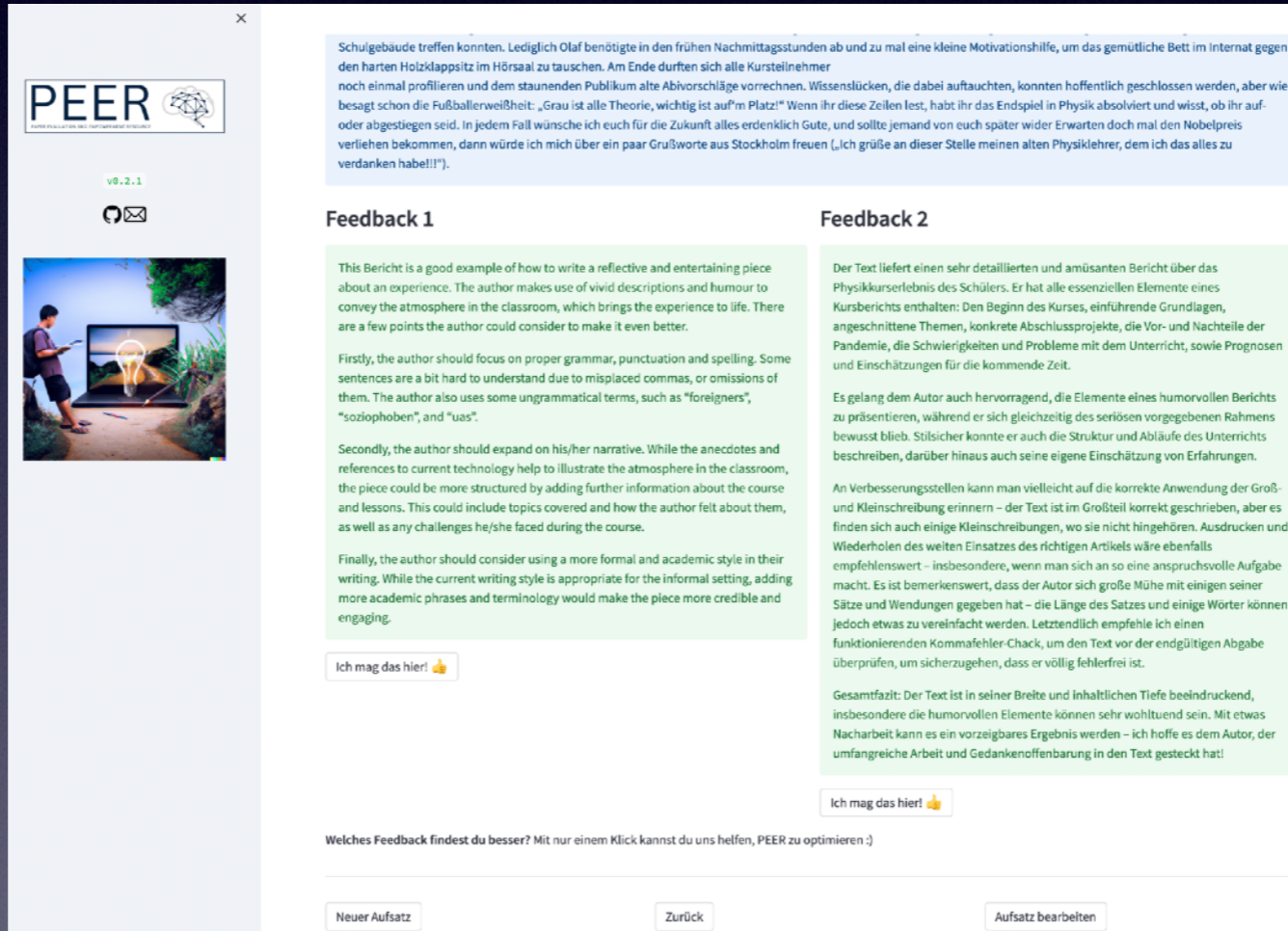
There's scope for improving the essay by including more details about the challenges and potential benefits of nuclear fusion, as well as discussing why it's considered a promising avenue for sustainable energy.

Overall, a good start with room for deeper exploration of the topic.

 Regenerate

ChatGPT for Teachers

PEER-Project of TU Munich



The screenshot shows the PEER interface. On the left is a sidebar with the PEER logo, version v0.2.1, and a small image of a person at a computer. The main area contains a text input field with German text, followed by two columns of feedback. Below the feedback is a question: "Welches Feedback findest du besser? Mit nur einem Klick kannst du uns helfen, PEER zu optimieren :)" and three buttons: "Neuer Aufsatz", "Zurück", and "Aufsatz bearbeiten".

Feedback 1

This Bericht is a good example of how to write a reflective and entertaining piece about an experience. The author makes use of vivid descriptions and humour to convey the atmosphere in the classroom, which brings the experience to life. There are a few points the author could consider to make it even better.

Firstly, the author should focus on proper grammar, punctuation and spelling. Some sentences are a bit hard to understand due to misplaced commas, or omissions of them. The author also uses some ungrammatical terms, such as "foreigners", "soziophoben", and "uas".

Secondly, the author should expand on his/her narrative. While the anecdotes and references to current technology help to illustrate the atmosphere in the classroom, the piece could be more structured by adding further information about the course and lessons. This could include topics covered and how the author felt about them, as well as any challenges he/she faced during the course.

Finally, the author should consider using a more formal and academic style in their writing. While the current writing style is appropriate for the informal setting, adding more academic phrases and terminology would make the piece more credible and engaging.

Feedback 2

Der Text liefert einen sehr detaillierten und amüsanten Bericht über das Physikserlebnis des Schülers. Er hat alle essenziellen Elemente eines Kursberichts enthalten: Den Beginn des Kurses, einführende Grundlagen, angeschnittene Themen, konkrete Abschlussprojekte, die Vor- und Nachteile der Pandemie, die Schwierigkeiten und Probleme mit dem Unterricht, sowie Prognosen und Einschätzungen für die kommende Zeit.

Es gelang dem Autor auch hervorragend, die Elemente eines humorvollen Berichts zu präsentieren, während er sich gleichzeitig des seriösen vorgegebenen Rahmens bewusst blieb. Stilsicher konnte er auch die Struktur und Abläufe des Unterrichts beschreiben, darüber hinaus auch seine eigene Einschätzung von Erfahrungen.

An Verbesserungsstellen kann man vielleicht auf die korrekte Anwendung der Groß- und Kleinschreibung erinnern – der Text ist im Großteil korrekt geschrieben, aber es finden sich auch einige Kleinschreibungen, wo sie nicht hingehören. Ausdrücken und Wiederholen des weiten Einsatzes des richtigen Artikels wäre ebenfalls empfehlenswert – insbesondere, wenn man sich an so eine anspruchsvolle Aufgabe macht. Es ist bemerkenswert, dass der Autor sich große Mühe mit einigen seiner Sätze und Wendungen gegeben hat – die Länge des Satzes und einige Wörter können jedoch etwas zu vereinfacht werden. Letztendlich empfehle ich einen funktionierenden Kommafehler-Check, um den Text vor der endgültigen Abgabe überprüfen, um sicherzugehen, dass er völlig fehlerfrei ist.

Gesamtfazit: Der Text ist in seiner Breite und inhaltlichen Tiefe beeindruckend, insbesondere die humorvollen Elemente können sehr wohltuend sein. Mit etwas Nacharbeit kann es ein vorzeigbares Ergebnis werden – ich hoffe es dem Autor, der umfangreiche Arbeit und Gedankenoffenbarung in den Text gesteckt hat!

Ich mag das hier! 👍

Ich mag das hier! 👍

Welches Feedback findest du besser? Mit nur einem Klick kannst du uns helfen, PEER zu optimieren :)

Neuer Aufsatz Zurück Aufsatz bearbeiten

<https://www.edu.sot.tum.de/hctl/forschung/peer/>

ChatGPT for Teachers

AI as a Native Speaker

- Siri & Co.: poor results / robot-like voices
- AI Tool: <https://elevenlabs.io/>
- Workflow:
 - Generate custom text in foreign language
 - Copy & Paste it in ElevenLabs Frontend
 - Download audio file

ChatGPT for Teachers

AI as a Native Speaker: Demo

Dear DAAD Summerschool participants, I would like to send you my warmest greetings from the USA! How nice that you have found your way to this wonderful city of Göttingen, the former place of Max Planck and Carl Friedrich Gauss. Today you have the great fortune to hear a talk by my dear old friend Rainer Hattenhauer on the impact of artificial intelligence in education. I hope you continue to enjoy it!

ChatGPT for Scientists

Let's ask ChatGPT again!

**How can you support me in my work as
a scientist?**

ChatGPT for Scientists



As an AI developed by OpenAI, I can provide various types of assistance to support your work as a scientist. Here are a few examples:

1. **Research:** I can help you conduct literature searches, identify relevant articles or papers, and summarize their key findings. If you provide an article's abstract, I can explain it in simpler terms or provide further context based on the information available to me.
2. **Data Analysis:** While I can't directly manipulate or analyze data, I can help you understand statistical methods, guide you through different data analysis techniques, and explain how to interpret the results.
3. **Writing and Editing:** I can assist in drafting and editing scientific papers or reports. From structuring your paper to ensuring your language is clear and concise, I can be a useful tool.
4. **Problem Solving:** If you're encountering issues in your experimental designs or analyses, I can help troubleshoot by providing suggestions based on scientific best practices and principles.
5. **Teaching and Communication:** I can provide clear explanations of complex scientific concepts, helping you to communicate your work effectively to a range of audiences.
6. **Keeping Updated:** I can help you stay up-to-date with recent developments and research in your field.
7. **Proposal Development:** I can provide guidance and tips on how to write effective research proposals and grant applications, including structuring your proposal, making a compelling case for your research, and describing your methodology and anticipated results.
8. **Ethics:** I can help you navigate the ethical considerations associated with your work, based on established guidelines and principles in scientific research.

ChatGPT for Scientists

The Art of Programming

Example: Tower of Hanoi



ChatGPT for Scientists

The Art of Programming

ChatGPT, please give me some code:

**Write a Python program for the
"Tower of Hanoi" problem.**

ChatGPT for Scientists

The Art of Programming



The "Tower of Hanoi" problem is a classic problem in the field of recursion and algorithm. Here is a Python function that solves the problem using recursion.



python

Copy code

```
def TowerOfHanoi(n , from_rod, to_rod, aux_rod):
    if n == 1:
        print("Move disk 1 from rod",from_rod,"to rod",to_rod)
        return
    TowerOfHanoi(n-1, from_rod, aux_rod, to_rod)
    print("Move disk",n,"from rod",from_rod,"to rod",to_rod)
    TowerOfHanoi(n-1, aux_rod, to_rod, from_rod)

# Driver code
n = 3
TowerOfHanoi(n, 'A', 'C', 'B')
```

The `TowerOfHanoi` function works as follows:

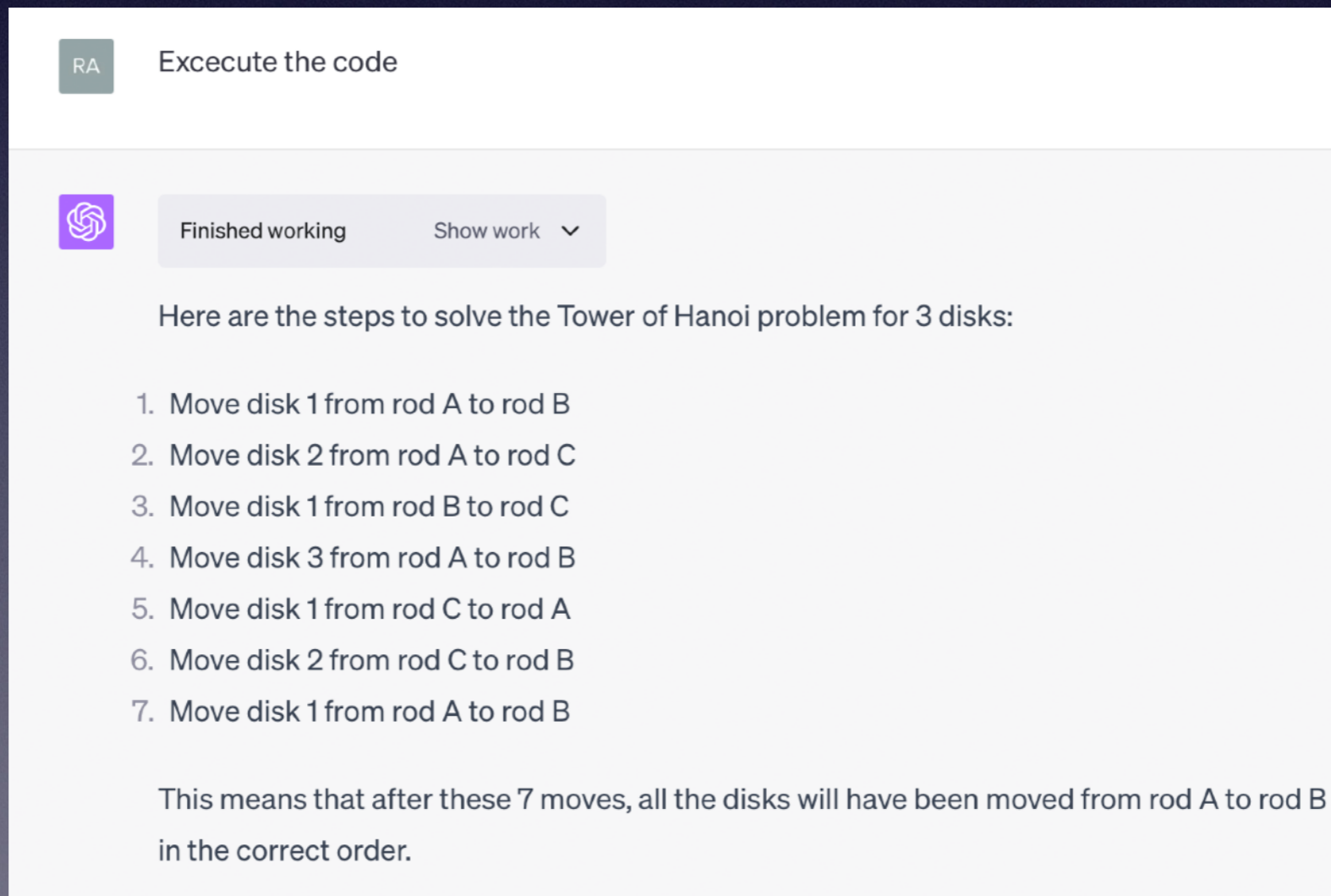
- If there is only one disk left to move (i.e., `n == 1`), it prints the move from `from_rod` to `to_rod` directly.
- If there is more than one disk, it divides the problem into two smaller problems:
 - It moves the upper `n-1` disks from `from_rod` to `aux_rod` (using `to_rod` as an auxiliary rod).
 - Then it moves the largest disk from `from_rod` to `to_rod`.
 - Finally, it moves the `n-1` disks that we left on `aux_rod` to `to_rod` (using `from_rod` as an auxiliary rod).

The driver code provides the input and starts the function. Here, `n` is the number of disks, and 'A', 'B', and 'C' are names of the rods. This program will print out the moves you need to make in order to solve the problem.



ChatGPT for Scientists

The Art of Programming

Execution of Code via Code Interpreter:



RA Excecute the code

 Finished working [Show work](#) 

Here are the steps to solve the Tower of Hanoi problem for 3 disks:

1. Move disk 1 from rod A to rod B
2. Move disk 2 from rod A to rod C
3. Move disk 1 from rod B to rod C
4. Move disk 3 from rod A to rod B
5. Move disk 1 from rod C to rod A
6. Move disk 2 from rod C to rod B
7. Move disk 1 from rod A to rod B

This means that after these 7 moves, all the disks will have been moved from rod A to rod B in the correct order.

ChatGPT for Scientists

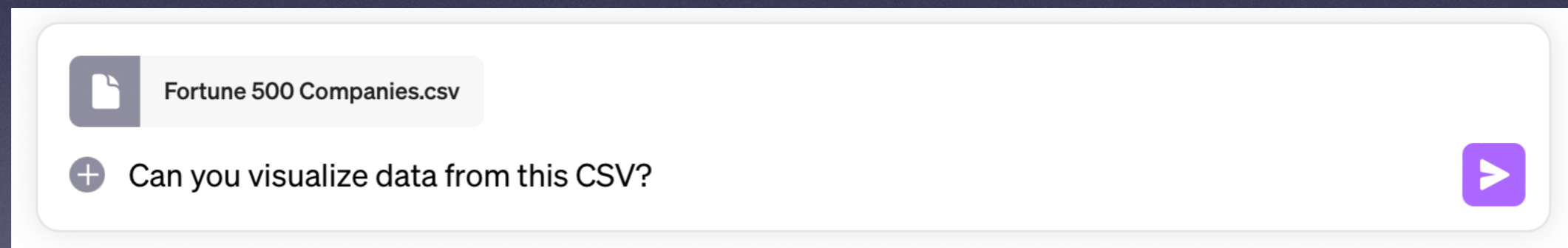
Data Science with Code Interpreter

- With activated Code Interpreter plugin, CSV files can be transferred.
- Example: CSV-Dataset from <https://www.kaggle.com/datasets/rm1000/fortune-500-companies>
- Goal: Visualization of the data

ChatGPT for Scientists

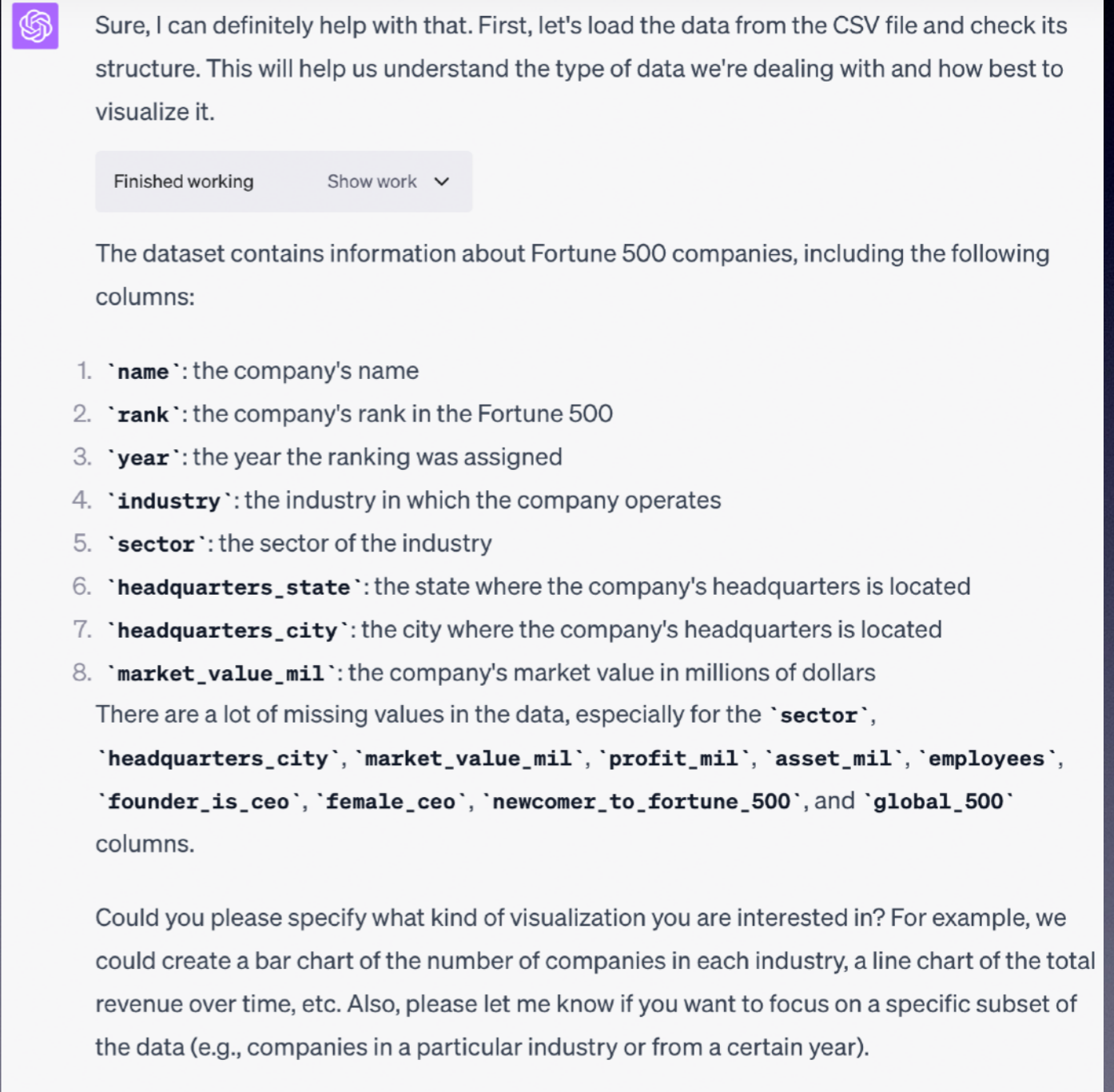
Data Science with Code Interpreter

- With activated Code Interpreter plugin, CSV files can be transferred.




ChatGPT for Scientists

Data Science with Code Interpreter



Sure, I can definitely help with that. First, let's load the data from the CSV file and check its structure. This will help us understand the type of data we're dealing with and how best to visualize it.

Finished working Show work 

The dataset contains information about Fortune 500 companies, including the following columns:

1. ``name``: the company's name
2. ``rank``: the company's rank in the Fortune 500
3. ``year``: the year the ranking was assigned
4. ``industry``: the industry in which the company operates
5. ``sector``: the sector of the industry
6. ``headquarters_state``: the state where the company's headquarters is located
7. ``headquarters_city``: the city where the company's headquarters is located
8. ``market_value_mil``: the company's market value in millions of dollars

There are a lot of missing values in the data, especially for the ``sector``, ``headquarters_city``, ``market_value_mil``, ``profit_mil``, ``asset_mil``, ``employees``, ``founder_is_ceo``, ``female_ceo``, ``newcomer_to_fortune_500``, and ``global_500`` columns.

Could you please specify what kind of visualization you are interested in? For example, we could create a bar chart of the number of companies in each industry, a line chart of the total revenue over time, etc. Also, please let me know if you want to focus on a specific subset of the data (e.g., companies in a particular industry or from a certain year).

ChatGPT for Scientists

Data Science with Code Interpreter

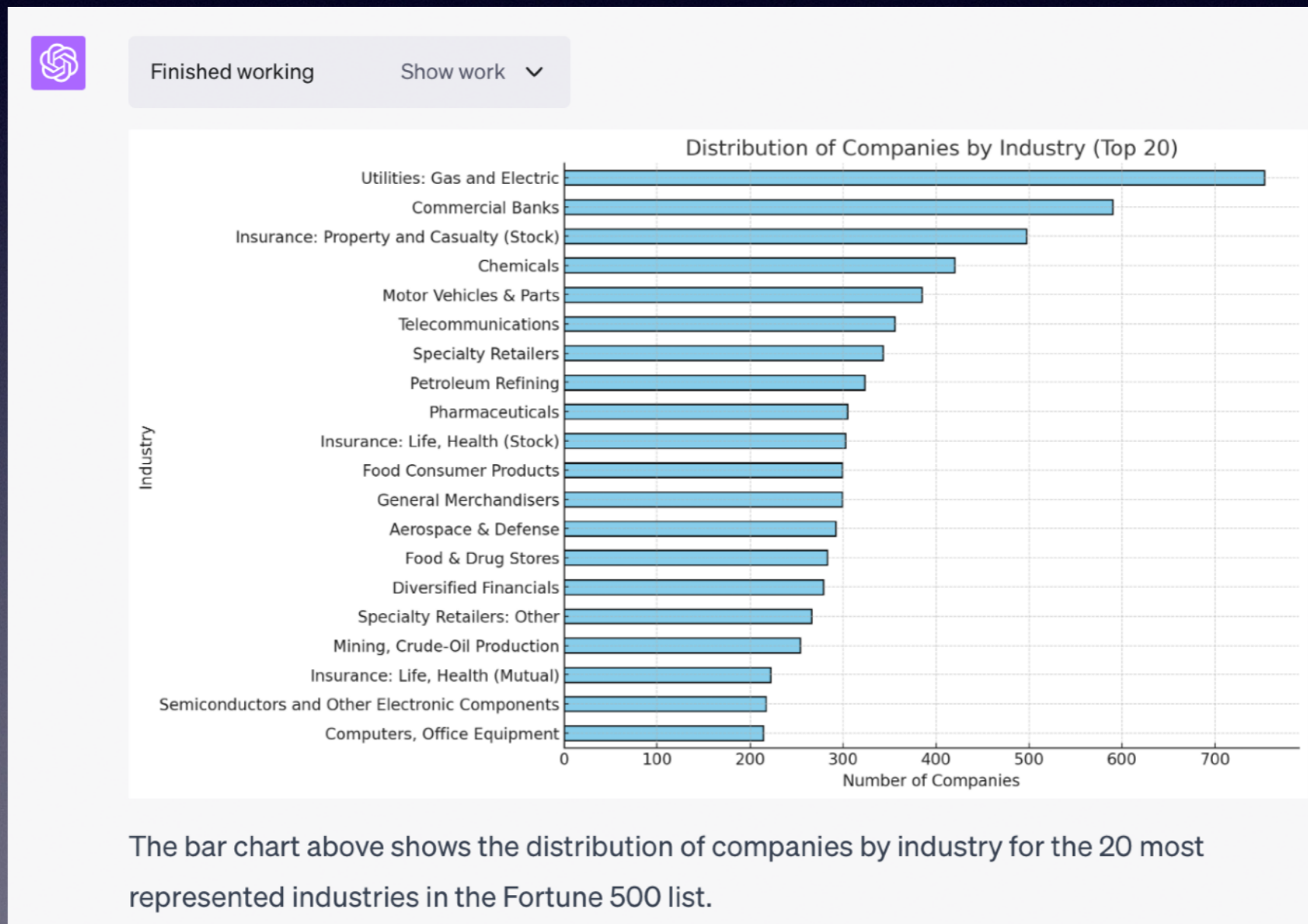
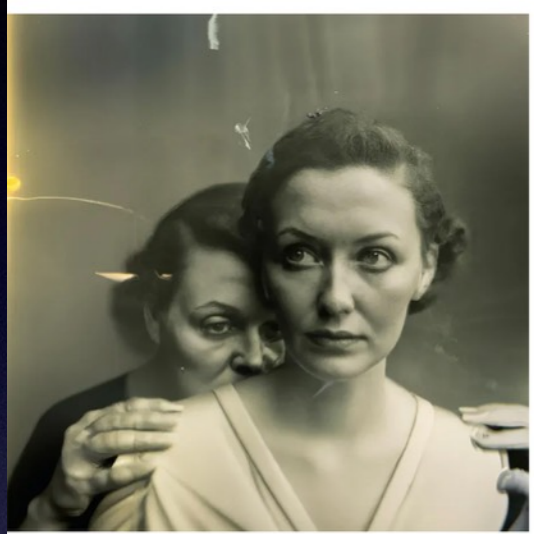


Image-generative AI

- **Warning:** Working with Dall-E, Midjourney & Co. can be addictive (I know what I'm talking about)
- **Art** must be redefined
- State of Art: **Midjourney** and Stable Diffusion
- Advantage of using AI images: they are not (yet) subject to copyright

Image-generative AI



AI or not
AI?



Image-generative AI

- New Job Profile:
The Promptographer
- Example: a **female influencer in the 1930s**



Image-generative AI

- Refined prompt with the help of ChatGPT / Photorealistic Plugin:



The screenshot shows a chat interface with a header for "Plugins" and "Enabled plugins: [Globe icon]". Below this, a user input field contains the text "create a Midjourney prompt for a female influencer in the 1930s". The response from the AI, indicated by a purple icon, shows it used the "Photorealistic" plugin. The refined prompt is as follows:

 Prompt 1: Picture a charismatic female influencer from the 1930s. She's dressed in the fashion of the era, a stylish cloche hat adorning her head and a fur stole draped elegantly over her shoulders. Her eyes are bright and full of ambition, her lips painted a bold red. The setting is a bustling city street, with vintage cars and pedestrians in period attire. The style should be reminiscent of a black and white photograph, capturing the essence of the time period. The lighting should be soft and diffused, casting gentle shadows and highlighting the textures of her clothing and the surrounding environment. The composition should be a mid-shot, taken with a Leica III, a popular camera of the era, with a 50mm lens, f/3.5, ISO 100, and a shutter speed of 1/60. The image should be highly detailed and high-resolution 16k, with a raw, unedited feel to it. --ar 16:9 --v 5.1 --style raw --q 2 --s 750

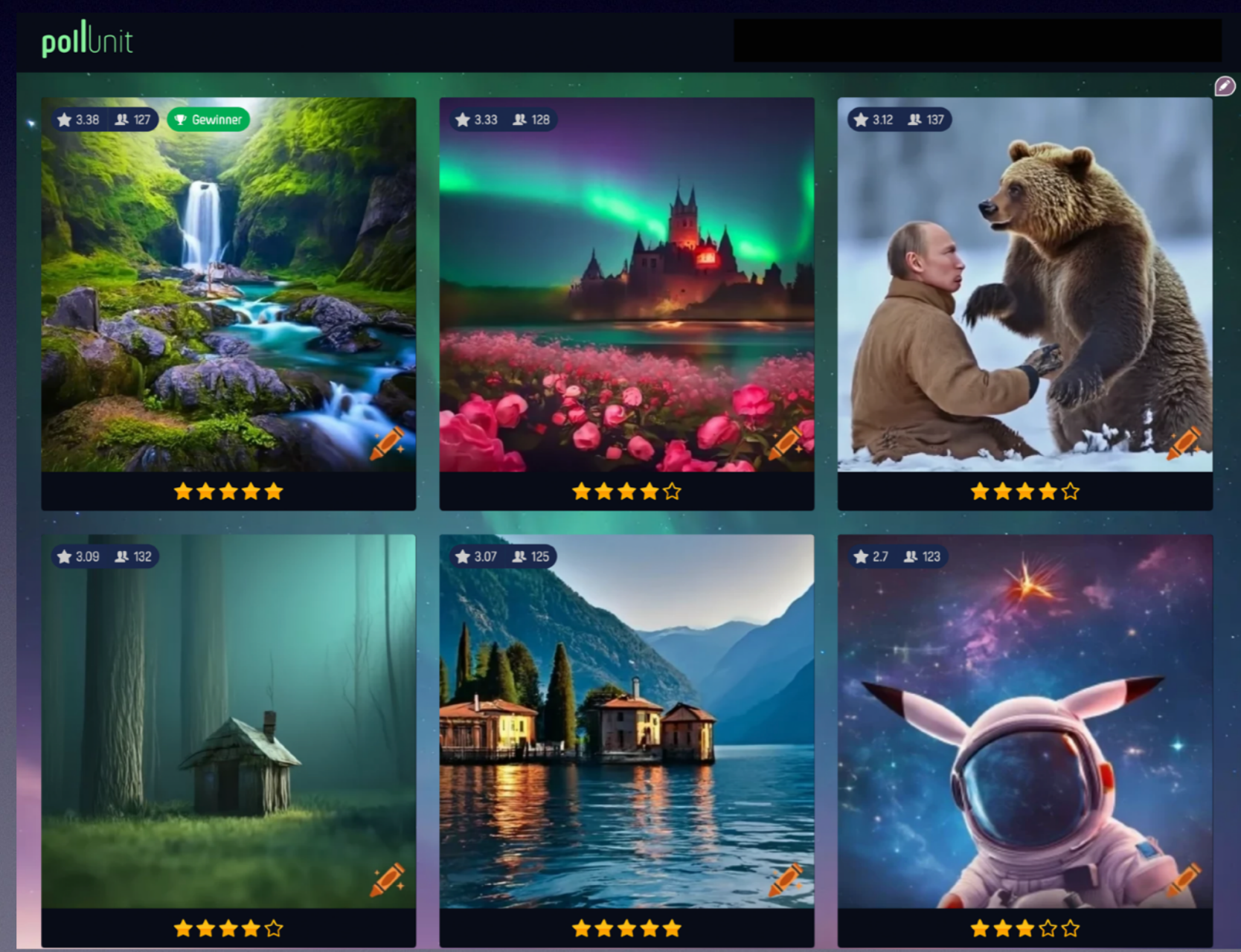
Image-generative AI

Result using ChatGPT / Photorealistic Plugin:



Image-generative AI

Student competition (using craiyon.com)



Tips and Tricks

- Italy in Spring 2023:



Accesso a ChatGPT disabilitato per gli utenti in Italia

Caro utente di ChatGPT,

Siamo spiacenti di informarti che abbiamo disabilitato l'accesso a ChatGPT per gli utenti in Italia su richiesta del Garante per la protezione dei dati personali.

Il 1 aprile 2023 abbiamo emesso un rimborso per tutti gli utenti in Italia che hanno acquistato un abbonamento a ChatGPT Plus nel mese di marzo 2023.

Abbiamo inoltre sospeso temporaneamente i rinnovi degli abbonamenti in Italia, in modo che agli utenti non venga addebitato alcun costo per il periodo in cui l'accesso a ChatGPT è sospeso.

Ci impegniamo a proteggere la privacy delle persone e riteniamo di offrire ChatGPT in conformità con il GDPR e le altre leggi sulla privacy. Ci impegneremo con il Garante con l'obiettivo di ripristinare l'accesso a ChatGPT il prima possibile.

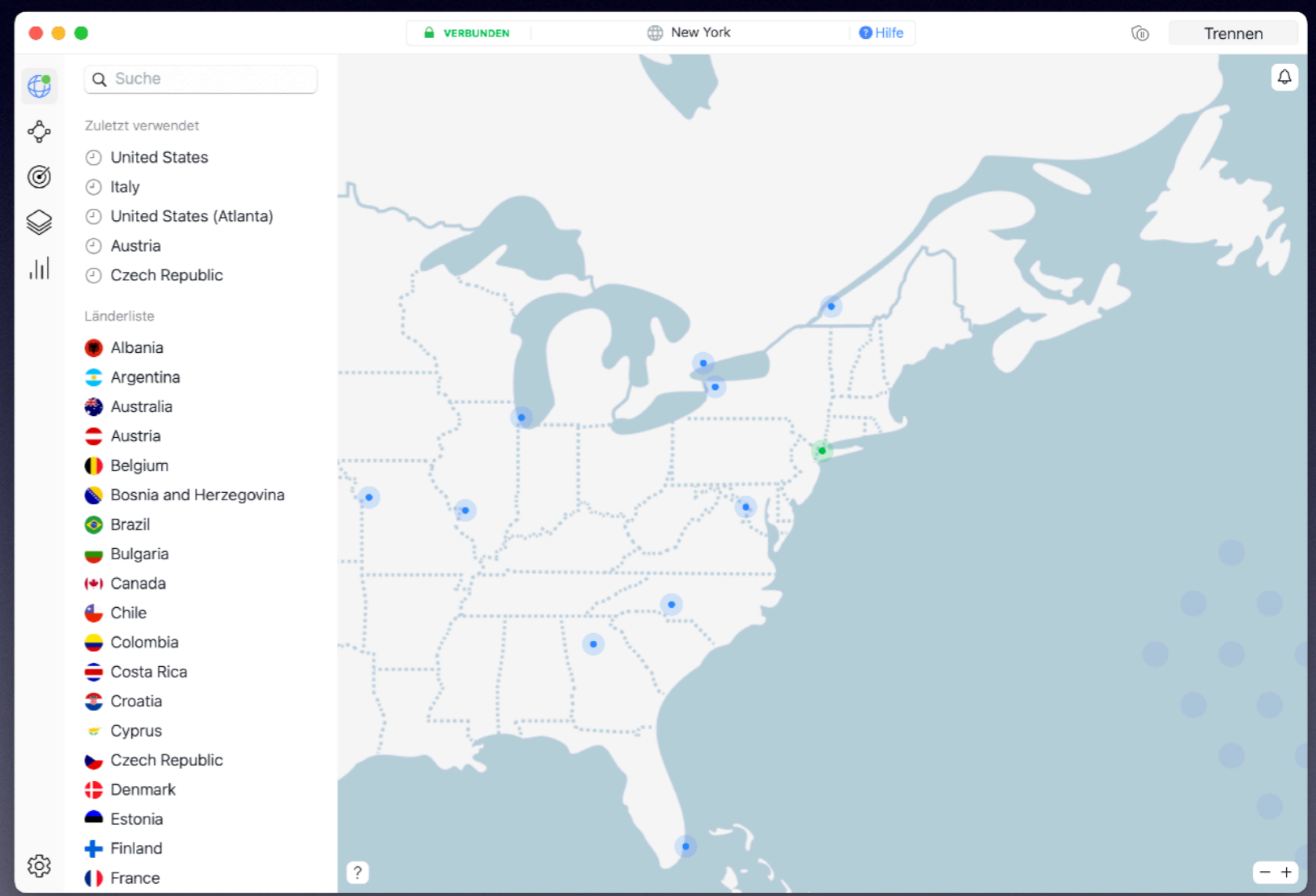
Molti di voi ci hanno detto di trovare ChatGPT utile per le attività quotidiane e ci auguriamo di poterlo rendere nuovamente disponibile al più presto.

Se hai domande o dubbi riguardanti ChatGPT o il processo di rimborso, abbiamo preparato un elenco di [Domande Frequenti con le relative risposte](#).

—The OpenAI Support Team

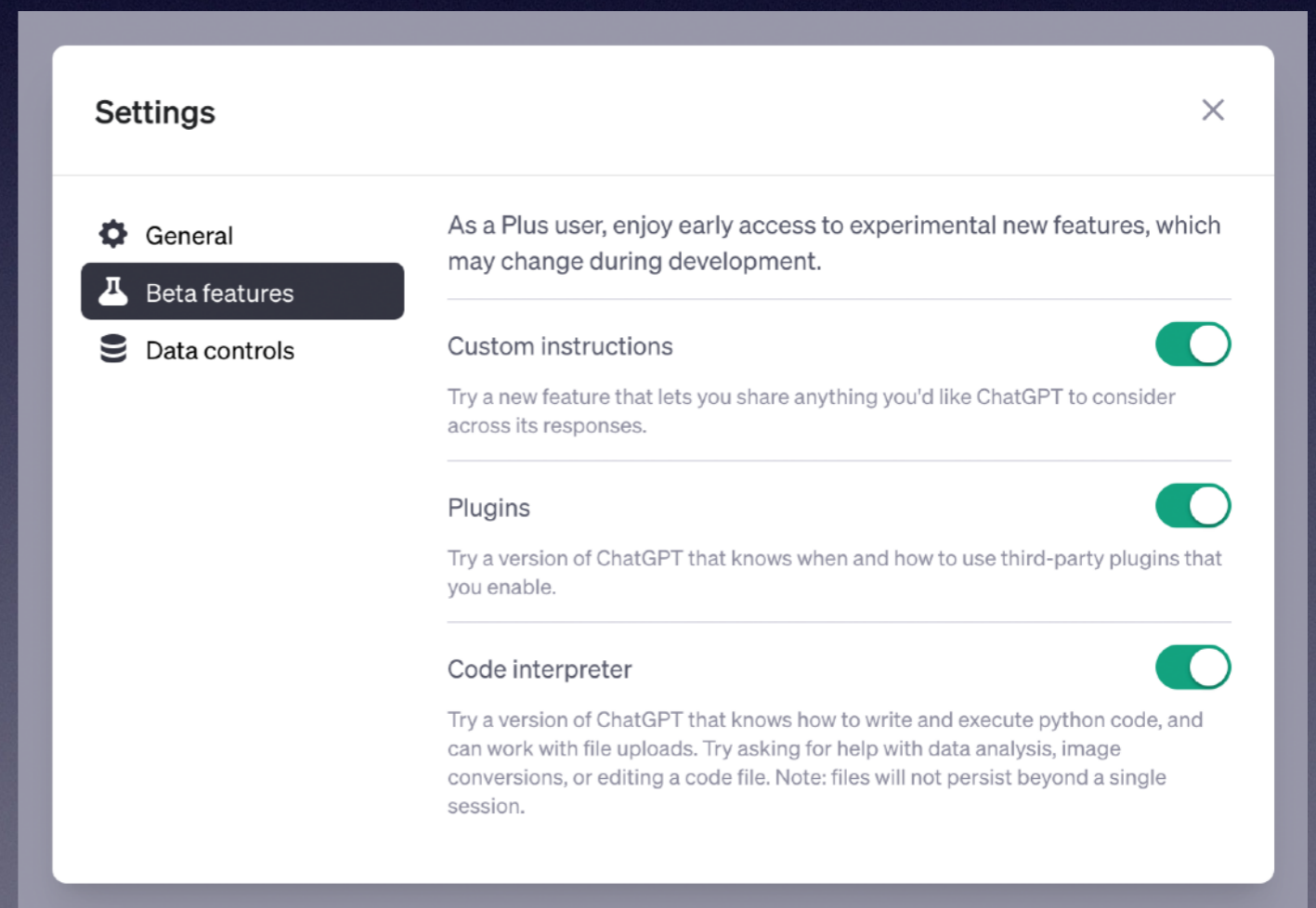
Tips and Tricks

- Solution: use VPN



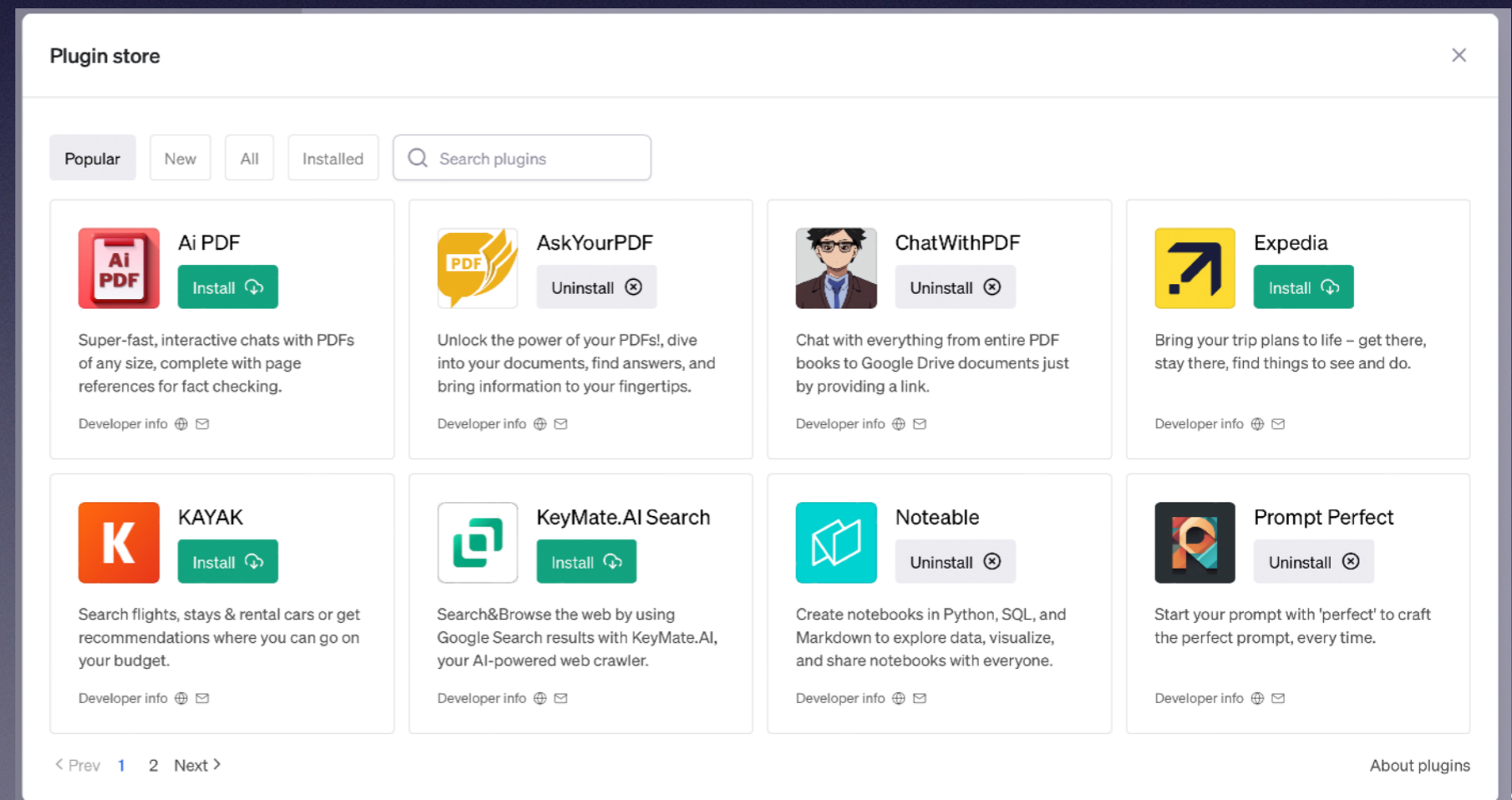
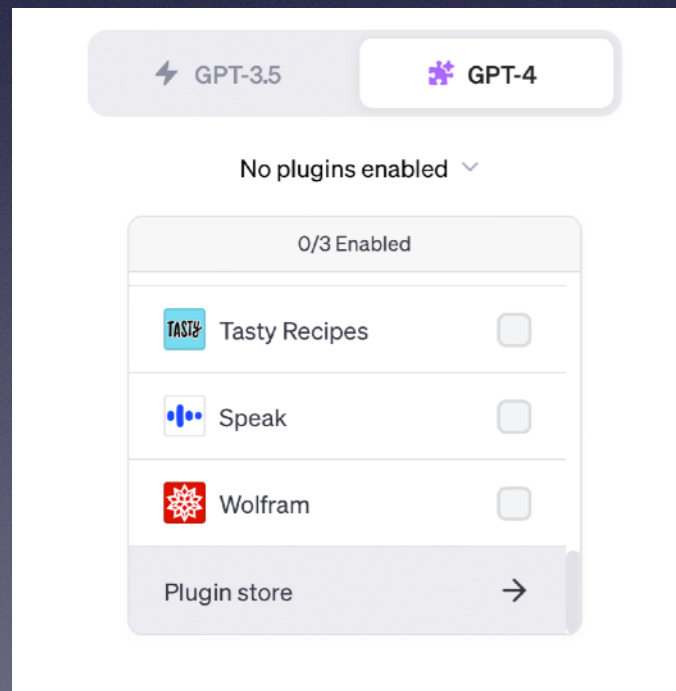
Tips and Tricks

- Use Plugins / Code Interpreter
- Only available for Plus-Users
- You have to activate them in the settings



Tips and Tricks


After activation, you can look for suitable plugins in the OpenAI Store



Tips and Tricks

Find a plugin for a specific purpose:

[pugin.ai](#), [whatplugin.ai](#), Plugins: Plugfinder, Pluginpedia



The screenshot shows the homepage of pugin.ai, a website for discovering AI plugins. The page has a light orange background. At the top left is the pugin.ai logo (a pug face) and the text 'pugin.ai'. To the right are links for 'Blog', 'Submit', and a 'Subscribe' button. The main heading is 'Discover AI Plugins'. Below this is a search bar containing the text 'web'. Under the search bar, it says '789 discovered' and '720 live'. To the right of this is a 'Sort' dropdown menu set to 'Popular'. Below the search bar are several category buttons: 'All', 'Developer Tools', 'Productivity', 'Reference', 'Business', 'Education', 'Social Networking', 'News', 'Shopping', 'Travel', 'Finance', 'Entertainment', 'Utilities', and 'Lifestyle'. The main content area displays four plugin cards. Each card has a logo, a title, a description, and an 'Updated' date.

Plugin Name	Description	Updated
WordPress.com Plu...	Plugin for managing WordPress.com websites, blogging, and ecommerce	05/13
Scraper	Scrape content from webpages by providing a URL.	05/30
WebPilot	Browse & QA Webpage/PDF/Data. Generate articles, from one or more URLs.	07/17
DeployScript	DeployScript can create web apps, websites, custom code and more! Turn prompts into apps..	06/17

Summary / Conclusion

- Generative AI tools are offering a wide range of opportunities in education and science.
- Teaching and testing methods must be adapted to the new tools.
- There will be a new generation of students and teachers for whom the use of AI tools will come naturally.
- The impact of ChatGPT and Co on the linguistic fields can be compared to the introduction of the electronic calculator in the field of mathematics / science.

Thank you for your attention!



Questions?