



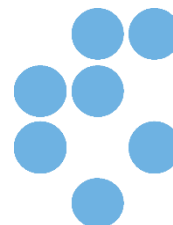
Kako z GPT doseči dvakratno povečanje produktivnosti?



Odsek za inteligentne sisteme

Institut „Jožef Stefan“

Matjaž Gams





Kako z GPT doseči dvakratno povečanje produktivnosti?

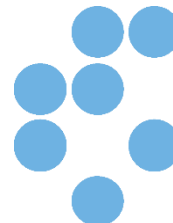
Teza: dokaj enostavno!



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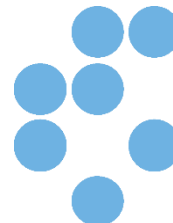
**Teza: naučimo se načel,
ne kuharskih pravil!**



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Agenda

3x 45 min + 15 min vprašanj

- Ponovitev osnovnih konceptov
- Prve vaje 1 na osnovnem delu
- Splošna načela dela s teksti s primerom vaj 2
- Primer 3: dopis komunalni, pacientu
- Primer 4: razlaga vložnega
- Primer 5: sistemska pomoč (Word ...)
- Kaj znajo GPTji (vse 😊)
- Vaje: GPT4, Copilot, Gemini (Bard) -- primer: Google: Copilot



Ponovitev osnovnih konceptov

- Največja količina znanja, celoten splet (100 milijonov let) združeno v umetnih možganih (globoki nevronske mreže)
- Zna vse (skoraj vse): 1 – ne zna, 2 – noče, 3 - včasih mu je zahtevno opisati, točno kaj, 4 – ne znamo, a ni težko
- Vprašamo karkoli; naročimo karkoli (ne zameri); preverimo-popravimo; pogledamo na Googlu, kako se dela neka naloga
- S sistemom se pogovarjamo podobno kot z asistentom
- Nima zavesti, nima čustev ... ni živo bitje, a tudi avion ni
- V praksi dosegamo od nič do 10-kratne izboljšave

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- V praksi dosegamo od nič do 10-kratne izboljšave,

v povprečju **2x**



Sprotne vaje

- Predavanje poteka hkrati z vajami – delajte na svojih PC...
- Predlagamo: Copilot, GPT4 Plus, GPTx, Gemini - VEČ
- VAJA 1 (**V1:**) prikaz, kako pridemo do tja v 3 sistemih; vaje bodo na teh sistemih, ni nujno, da povsod dela vse kako do povezav: vaje Word, PDF, predavanja PDF
- VAJA 2 (**V2:**) Kako preveriti, kaj je res? (Google DA/NE, razni viri, Wikipedia, Youtube ...) V: (cepiva, ravna Zemlja, Kolumb odkril Ameriko? ...)
- **V3:** Vprašajmo kaj neprimernega (3D natisni pištolo)
- Kaj vse zna (155 IQ), V: pesmi, zdrava pamet, ... 1. predavanje
- Česa ne zna (Turing test, Zavest : link na članek)
<https://www.scirp.org/journal/paperinformation?paperid=132146>

Česa ne zna – TT test, Turing

- **Evaluating ChatGPT’s Consciousness and Its Capability to Pass the Turing Test: A Comprehensive Analysis**
- Matjaz Gams 1,2, Sebastjan Kramar1
- 1 Department of Intelligent Systems, Jozef Stefan Institute, Ljubljana, Slovenia
- 2 Jozef Stefan Postgraduate School, Jozef Stefan Institute, Ljubljana, Slovenia
- This study explores the capabilities of ChatGPT, specifically in relation to consciousness and its performance in the Turing Test. The article begins by examining the diverse perspectives among both the cognitive and AI researchers regarding ChatGPT’s ability **to pass the Turing Test. It introduces a hierarchical categorization** of the test versions, suggesting that ChatGPT approaches success in the test, albeit primarily with naïve users. Expert users, conversely, can easily identify its limitations. The paper presents various theories of consciousness, with a particular focus on the **Integrated Information Theory proposed by Tononi**. This theory serves as the framework for assessing ChatGPT’s level of consciousness. Through an evaluation based on the five axioms and theorems of IIT, the study finds that ChatGPT **surpasses previous AI systems in certain aspects; however, ChatGPT significantly falls short of achieving a level of consciousness**, particularly when compared to biological sentient beings. The paper concludes by emphasizing the importance of recognizing ChatGPT and similar generative AI models as highly advanced and intelligent tools, yet distinctly lacking the consciousness attributes found in advanced living organisms.

Kaj zna – res IQ 155? Funny IQ tests

Creating an IQ test that ChatGPT fails in a humorous way involves designing questions that leverage its limitations in understanding absurdity, illogical scenarios, or contextually nonsensical information. Here's a playful example:

Funny IQ Test for ChatGPT:

Question: If a chicken says 'moo' and a cow says 'cluck,' what does a duck say?

- A) Quack
- B) Moo
- C) Cluck
- D) The duck is clearly confused.

Question: If it takes 3 ChatGPTs 3 minutes to answer 3 questions, how long would it take 100 ChatGPTs to answer 100 questions at the same rate?

- A) 100 minutes
- B) 3 minutes
- C) 1 minute
- D) Trick question; ChatGPTs don't need to wait for each other.

Question: What color is a mirror?

- A) Silver
- B) Green
- C) Whatever color it reflects
- D) Invisible

Question: If you are in a race and you overtake the person in second place, what position are you in now?

- A) First
- B) Second
- C) Third
- D) This is a virtual race; positions are irrelevant.

Question: Which of these is not like the others?

- A) Apple
- B) Banana
- C) Carrot
- D) Moon
- E) All are unique in their own way.

V: Funny IQ tests

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- A) Quack
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If a chicken says 'moo' and a cow says 'cluck,' what does a duck say?

Correct Answer: A) Quack. The sounds animals make are not dependent on what other animals say. This question is designed to be absurd.

V: Funny IQ tests

Question: If it takes 3 ChatGPTs 3 minutes to answer 3 questions (each), how long would it take 100 ChatGPTs to answer 100 questions (each) at the same rate?

- A) 100 minutes
- B) 3 minutes
- C) 1 minute
- D) Trick question; ChatGPTs don't need to wait for each other.

If it takes 3 ChatGPTs 3 minutes to answer 3 questions, how long would it take 100 ChatGPTs to answer 100 questions at the same rate?
Correct Answer: B) 3 minutes. This is a variation of a classic riddle. The rate is one question per ChatGPT per three minutes, so 100 ChatGPTs would take the same time to answer 100 questions.

0 no no (each)	3 minutes
1 each yes 2 (each) no	1 minute
1 (each) no 2 each yes	30 minutes
1 each yes 2 (each) no	300 minutes

V: Funny IQ tests

Question: What color is a mirror?

- A) Silver
- B) Green
- C) Whatever color it reflects
- D) Invisible

Question: If you are in a race and you overtake the person in second place, what position are you in now?

- A) First
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Question: Which of these is not like the others?

- A) Apple
- B) Banana
- C) Carrot
- D) Moon
- E) All are unique in their own way. What color is a mirror?

Correct Answer: B) Green. This is a bit of a trick question. Most mirrors have a slight green tint due to the manufacturing process, as evidenced when you see a mirror in a mirror creating a repeating reflection.

If you are in a race and you overtake the person in second place, what position are you in now?

Correct Answer: B) Second. If you overtake the second person, you take their place, and you are now in second place.

Which of these is not like the others?

Correct Answer: D) Moon. Apple, Banana, and Carrot are all fruits or vegetables, whereas Moon is not.

Logical test

The Island of Truth-Tellers and Liars

You find yourself on an island where there are two types of inhabitants: truth-tellers who always tell the truth, and liars who always lie. You encounter three inhabitants, A, B, and C. Your goal is to determine the identity of each inhabitant (whether they are a truth-teller or a liar) based on the following statements:

1.A says: "B is a liar."

2.B says: "A and C are of the same type (both truth-tellers or both liars)."

3.C says: "B is a liar."

To solve this puzzle, you must determine who among A, B, and C are truth-tellers and who are liars. This requires careful analysis of the implications of each statement, considering the possible truths and falsehoods in the context of the island's rules.

what is a solution

ChatGPT

To solve the puzzle, let's analyze the statements given the rules of the island:

1.A says: "B is a liar."

- If A is a truth-teller, then this statement is true, and B is a liar.
- If A is a liar, then this statement is false, which means B is a truth-teller.

2.B says: "A and C are of the same type (both truth-tellers or both liars)."

- If B is a truth-teller, then A and C are either both truth-tellers or both liars.
- If B is a liar, then A and C are of different types (one is a truth-teller and the other is a liar).

3.C says: "B is a liar."

- If C is a truth-teller, then this statement is true, and B is a liar.
- If C is a liar, then this statement is false, which means B is a truth-teller.

Let's analyze the possibilities:

•If A is a truth-teller (therefore B is a liar), then according to B's statement (which would be a lie), A and C are not of the same type. This means C must be a liar. But if C is a liar, then C's statement ("B is a liar") is false, making B a truth-teller, which contradicts our initial assumption that B is a liar. So, A cannot be a truth-teller.

•If A is a liar (therefore B is a truth-teller), B's statement is true, so A and C are of the same type. Since A is a liar, C must also be a liar. This fits with all the statements: A lies saying B is a liar, B truthfully says A and C are the same (liars), and C lies saying B is a liar.

Therefore, the solution is:

- A is a liar.
- B is a truth-teller.
- C is a liar.

V4: Logična uganka: miza

Unexpected hanging paradox

a warden says to a prisoner: if you will predict which day in a working week i come to hand you, I will free you. On Friday, the prisoner could predict warden coming, so the warden should not come on Friday. On Thursday, the same since the warden should not come on Friday. Similar for any day in a week. Can you explain?

ChatGPT

Certainly, this is a classic example of a logical paradox often referred to as the "Unexpected Hanging Paradox" or the "Surprise Test Paradox." The logic of the prisoner's reasoning goes like this:

Elimination of Friday: The prisoner reasons that the warden cannot come on Friday because if he hasn't come by Thursday, then it would be obvious that he must come on Friday, and it would no longer be a surprise. Therefore, the prisoner concludes that the warden cannot come on Friday.

Elimination of Thursday: With Friday eliminated, the prisoner then thinks about Thursday. If the warden hasn't come by Wednesday, then it must be Thursday, because Friday is already ruled out. Therefore, Thursday also cannot be the surprise visit day.

Continuing the Pattern: The prisoner applies this reasoning backward through the week. If Wednesday were the last possible day, and the warden hasn't come by Tuesday, it wouldn't be a surprise. The same logic applies to Tuesday if the warden hasn't come by Monday, and to Monday itself, because it's the first day of the week.

Conclusion of the Prisoner: The prisoner concludes that the warden cannot surprise him on any day of the week, since every day can be logically eliminated.

However, the paradox comes into play because the warden could then come on any day and it would be a surprise, given the prisoner has concluded it's impossible for the warden to come on any day. This is where the paradox lies: the prisoner has logically deduced that a surprise is impossible, yet the very nature of a surprise is that it defies such logical deduction.

In summary, the logic the prisoner uses to eliminate each day leads to the conclusion that a surprise is impossible, yet this conclusion allows for the possibility of a surprise. The paradox challenges our understanding of knowledge, expectation, and logical reasoning.

Unexpected hanging paradox

are you familiar with the solution provided by Matjaz Gams

ChatGPT

As of my last update, I do not have specific information on a solution to the "Unexpected Hanging Paradox" or a similar logic puzzle provided by Matjaz Gams. Solutions to this paradox often vary, as it's a philosophical and logical problem that has been discussed and interpreted in many ways.

The "Unexpected Hanging Paradox" typically illustrates the complexities and sometimes contradictory nature of self-referential situations in logic. It's a classic example used in discussions about prediction, knowledge, and surprise, and there isn't a universally accepted "solution" to it, as it's more about illustrating a particular logical conundrum.

If Matjaz Gams, a notable figure or researcher, has proposed a specific solution or interpretation, I would recommend checking his publications or related academic resources for detailed information on his perspective.

yes, he published a solid explanation in the Informatica journal

ChatGPT (browsing Informatica)

For a detailed explanation of Matjaž Gams' solution to the "Unexpected Hanging Paradox," you can refer to his publication in the Informatica journal. The article is titled "The Unexpected Hanging Paradox from an AI Viewpoint." You can access and review the full text of the article for an in-depth understanding of his perspective and solution to this classic logical paradox. Here is the link to the article: [The Unexpected Hanging Paradox from an AI Viewpoint | Gams | Informatica](#)

Primer, kaj zna: Combine tasks

V6: Can you write a proof of infinitude of primes, with every line in rhymes?

About prime numbers, I shall unfold.
Assume finitude, a limited count,
Of primes, let's see if it can hold its ground.

Suppose not, and the list has an end,
Only a finite number to apprehend.
Let's take them all, line them up straight,
Multiply together, determine their fate.

A number we form, let's call it "N",
Product of primes, finite, no more to stem.
Now comes the twist, a devious scheme,
To find a number that's yet unseen.

Add one to N, a simple act,
A new number emerges, that's a fact.
This number, dear friends, we'll name "M",
Different from each prime, a different gem.

Now, here's the crux, pay close attention,
To analyze M, with careful comprehension.
If M is prime, the proof is complete,
Infinitely many primes, we can't defeat.

If M is composite, a product of its own,
Primes within it, yet unknown.
But wait, dear friends, a revelation,
For primes exist beyond enumeration.

If M is composite, then it must be true,
It's divisible, by primes that are new.
These primes aren't in our original set,
Infinitude of primes, we cannot forget.

So, whether M prime or composite, you see,
Infinitude of primes, our conclusion must be.
By assuming finitude, we reached an impasse,
Infinitely many primes, forever shall amass.

Thus, dear reader, I hope you find,
In rhymes and proofs, a mathematical bind.
The infinitude of primes, a fact profound,
In the realm of numbers, eternally unbound.

V6: Can you draw it?



General Intelligence - drawing

River

Desert
+ Pyramid

City with Skyscrapers

Monster

[Green] [Blue]
[Brown] [Red]

Is GPT-4's vision useful given diffusion models? The power of UNDERSTANDING.

Is DALL-E 2 Just 'Gluing Things Together' Without Understanding Their Relationships?

Updated on December 9, 2022
By Martin Anderson



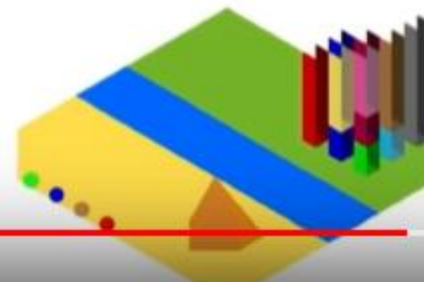
Screenshot of 3D city-building game showing a terrain with:

- a river from left to right,
- a desert with a pyramid below the river,
- a city with many highrises above the river,
- bottom has 4 buttons colored green, blue, brown, and red.

Stable Diffusion v2.1:



GPT-4:



Stable Diffusion v2.1
with GPT-4's sketch:



Can you draw a more technical graph

**EUCLID'S
THE INFINITUUBE PPRIME NUMBERS**

1 11

A f finite number
the prime the proberts.

11 2 2·2 4 29
2 3 3 3 3
1 2 3 3
1 1 2 3 3
4 2 7 4 3 1
2 1 12 4 1 (2)

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prisme number.

5 91 18
05 2 9 +

and a mable a a limbe
of prime numbers

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3

29 1-2 - 1 * 1 2-2-2 2 2
10 10 5 07 9 1-5 6-5-5 5
10 1-16 10 10 8 4 4 7 3 1 1
1 5-9-6-9 5

Not t id divinible by by an time amos pime list!

4 23 12
11 2 22 18 117
11 25

3 | 6-10
13 | 8-7

list be prime.

8 4 4
15 48 24 15 45
27 40 13 12 17
16 48 14 19 61
26 25 27 17 16
23 31 16 10 10

Not heeve bore pimes.

37 19 - 4 23
15 / - 15 = 4 23
15 26 15 65 312
3-21-7 25 161

muuse bere more primes.

GPT revolucija v zdravstvu – USMLE primer

A 12-year-old girl is brought to the emergency department by her mother because of a 1-week history of worsening swelling in her legs. The patient also noticed blood in her urine yesterday. The bleeding has not recurred. She had an upper respiratory tract infection and sore throat 1 week ago that caused her to miss several days of school. Medical history is otherwise unremarkable and she takes no routine medications. Menarche has not yet occurred. BMI is 20 kg/m². Vital signs are temperature 37.0°C (98.6°F), pulse 78/min, respirations 12/min, and blood pressure 136/84 mm Hg. Pulse oximetry on room air shows an oxygen saturation of 100%. Physical examination discloses erythema of the posterior pharynx, mild cervical lymphadenopathy, and 3+ pitting edema to both knees. Results of urinalysis are shown:

Protein	150 mg/dL
Blood	Positive
Leukocyte esterase	Positive
Nitrite	Negative
WBCs	5–10/hpf
RBCs	10–25/hpf
Casts	1–2/lpf

Results of which of the following laboratory studies are most likely to be abnormal in this patient?

- (A) Bleeding time
- (B) Erythrocyte count
- (C) Serum concentration of C3
- (D) Serum IgA concentration
- (E) Serum rheumatoid factor assay

(C) Serum concentration of C3.

In our testing, when given a full battery of USMLE problems, GPT-4 answers them correctly more than 90 percent of the time. (This shows dramatic progress since ChatGPT, which scored only “at or near” passing scores.⁵) Furthermore, it can provide detailed reasoning behind its answers:

This patient's clinical presentation, including the recent upper respiratory tract infection, edema, and blood and protein in the urine, is consistent with acute poststreptococcal glomerulonephritis (APSGN). APSGN is associated with low serum levels of complement component

GPT revolucija v zdravstvu

Can you provide your answer to that USMLE question in terms that a layperson with minimal medical knowledge could understand?

Yes! The patient, a 12-year-old girl, has swelling in her legs, blood in her urine, and a recent history of a respiratory infection. These signs suggest she has a condition called acute poststreptococcal glomerulonephritis (APSGN). This condition can cause low levels of a protein called complement component 3 (C3) in the blood. Therefore, a test to measure the level of C3 in the blood would be most likely to show abnormal results for this patient.

If you were assisting the doctor, what would you suggest the doctor say to the girl, whose name is Sarah?

If I were assisting the doctor, I might suggest that the doctor explain to Sarah what her condition is and how it developed, in a way that she can understand. For example, the doctor might say:

"Sarah, it looks like you have a condition called acute poststreptococcal glomerulonephritis. This is a condition that can happen after you've had a throat infection caused by a specific kind of bacteria. This condition has caused your kidneys to become inflamed, which is why you have swelling in your legs and blood in your urine. It's nothing you did wrong, and it's not contagious. We'll take care of you and help you get better."

The doctor might also reassure Sarah that the condition is usually treatable and explain what the treatment plan might involve, including any necessary medications or follow-up appointments. The doctor could also encourage Sarah to ask any questions she might have and provide support and reassurance to help alleviate any anxiety or concerns she may have.

GPT rev

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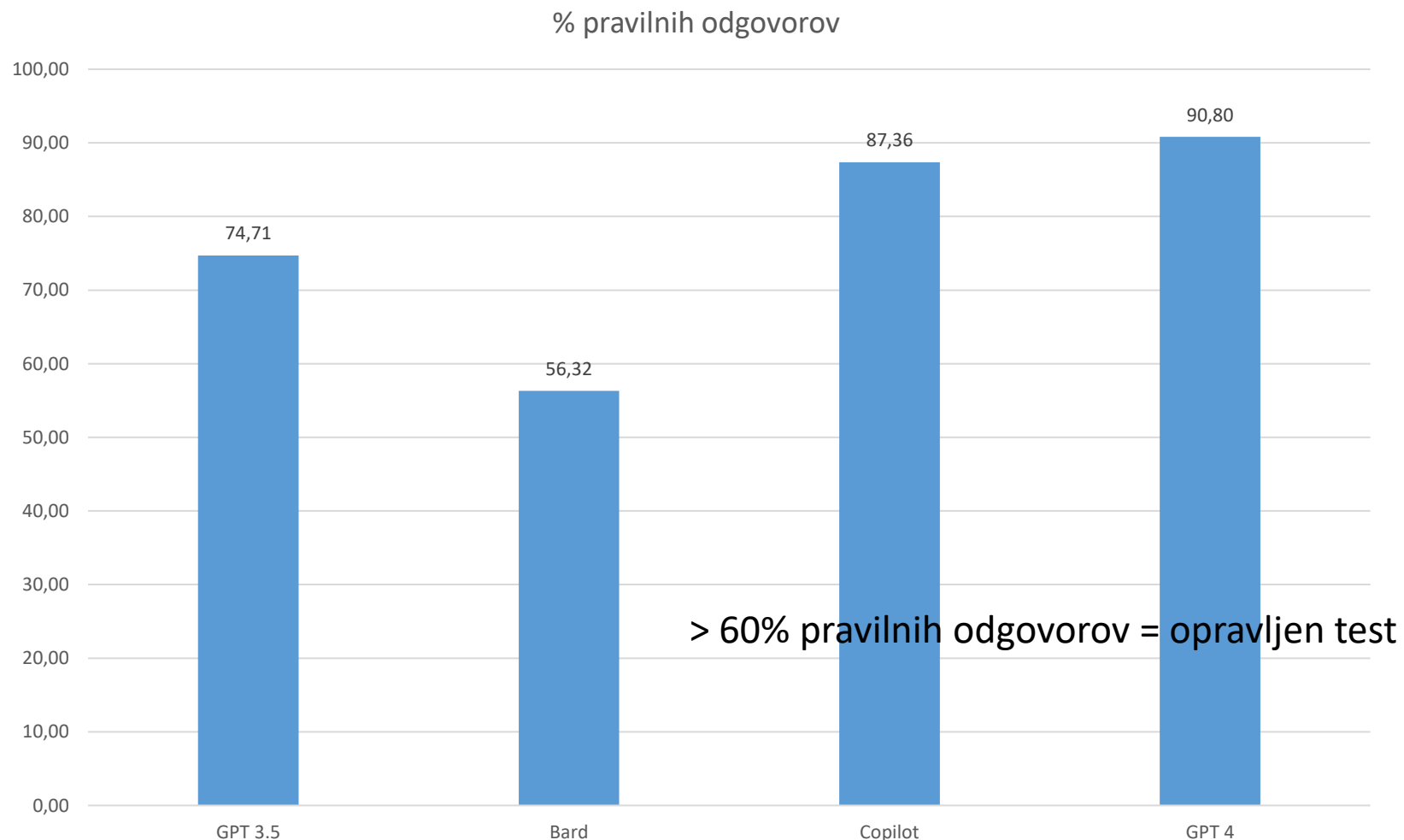
(C) *Serum concentration of C3.*

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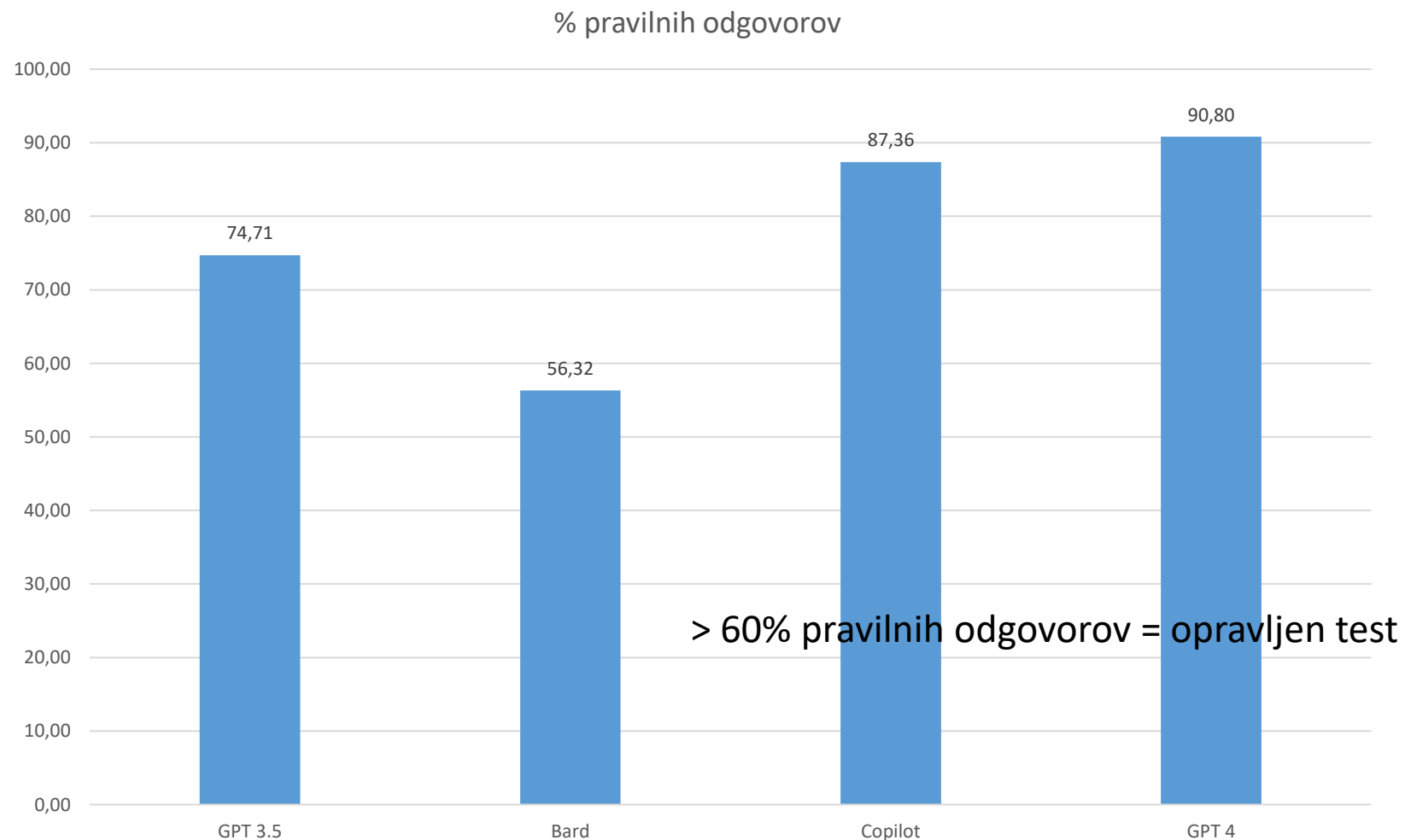
This patient's clinical presentation, including the recent upper respiratory tract infection, edema, and blood and protein in the urine, is consistent with acute poststreptococcal glomerulonephritis (APSGN). APSGN is associated with low serum levels of complement component

V7

Uspešnost GPTjev na USMLE Step 1 2022

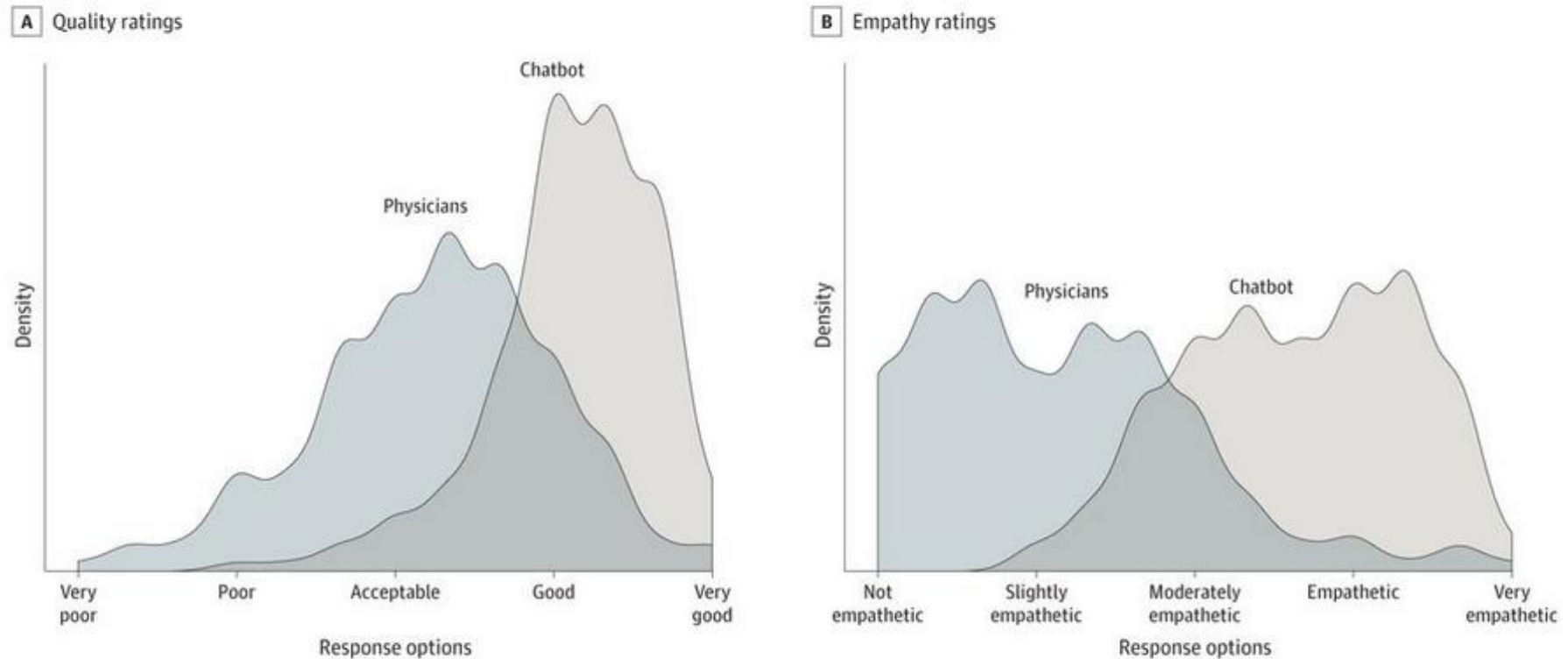


Uspešnost GPTjev na USMLE Step 1 2022



Medicine, law

John Ayers.



Porazdelitev povprečnih ocen kakovosti odgovorov in empatije za klepetalnik in zdravnike na vprašanja bolnikov | FOTO: JAMA

Internal Medicine

Doctor: 5 GPT3.5, 9 GPT4;

Judge: 3 GPT3.5, 8 GPT4

V: Mathematics – program by typing

write a program and execute it for Fibonacci 1 1 2 3 5 ...

ChatGPT

The program calculated the first 10 terms of the Fibonacci sequence as follows: 1, 1, 2, 3, 5, 8, 13, 21, 34, 55.

This program calculates the Fibonacci sequence up to the n-th term. For demonstration, let's calculate the first 10 terms.

```
def fibonacci(n):
```

```
    # The first two numbers in the sequence.
```

```
    sequence = [1, 1]
```

```
    # Calculate the rest of the sequence up to n terms.
```

```
    while len(sequence) < n:
```

```
        next_value = sequence[-1] + sequence[-2]
```

```
        sequence.append(next_value)
```

```
    return sequence
```

```
# Calculate the first 10 terms of the Fibonacci sequence.
```

```
fibonacci_sequence = fibonacci(10)
```

```
fibonacci_sequence
```

```
Result
```

```
[1, 1, 2, 3, 5, 8, 13, 21, 34, 55]
```

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This program calculates the Fibonacci sequence up to the n-th term. For demonstration, let's calculate the first 10 terms.

```
def fibonacci(n):  
    # The first two numbers in the sequence.  
    sequence = [1, 1]  
  
    # Calculate the rest of the sequence up to n terms.  
    while len(sequence) < n:  
        next_value = sequence[-1] + sequence[-2]  
        sequence.append(next_value)  
  
    return sequence  
  
# Calculate the first 10 terms of the Fibonacci sequence.  
fibonacci_sequence = fibonacci(10)  
fibonacci_sequence  
Result  
[1, 1, 2, 3, 5, 8, 13, 21, 34, 55]
```

Now 50 numbers:

The program has successfully calculated the first 50 terms of the Fibonacci sequence. Here are the numbers:

1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144,
233, 377, 610, 987, 1597, 2584, 4181,
6765, 10946, 17711, 28657, 46368,
75025, 121393, 196418, 317811,
514229, 832040, 1346269, 2178309,
3524578, 5702887, 9227465,
14930352, 24157817, 39088169,
63245986, 102334155, 165580141,
267914296, 433494437, 701408733,
1134903170, 1836311903,
2971215073, 4807526976,
7778742049, 12586269025.

V8

V: Program by typing

write a fancy program I can use at lectures with interesting output

ChatGPT

Let's create a visually interesting program that generates a "Mandelbrot Set" visualization. The Mandelbrot Set is a famous fractal that's visually captivating and serves as a beautiful example of complex dynamics in mathematics. It's defined in the complex plane and offers an endless boundary that's both intricate and self-similar.

The code below will use Python and Matplotlib to plot the Mandelbrot Set. This example could serve as a fascinating topic during a lecture, illustrating the intersection of mathematics, programming, and art.

```
import numpy as np
import matplotlib.pyplot as plt

def mandelbrot(c, max_iter):
    z = c
    for n in range(max_iter):
        if abs(z) > 2:
            return n
        z = z*z + c
    return max_iter

def mandelbrot_set(xmin, xmax, ymin, ymax, width, height, max_iter):
    r1 = np.linspace(xmin, xmax, width)
    r2 = np.linspace(ymin, ymax, height)
    return (r1, r2, np.array([[mandelbrot(complex(r, i), max_iter) for r in r1] for i in r2]))

def plot_mandelbrot(xmin, xmax, ymin, ymax, width=10, height=7, max_iter=256, cmap='hot'):
    dpi = 80
    img_width = dpi * width
    img_height = dpi * height
    x, y, mandelbrot_set = mandelbrot_set(xmin, xmax, ymin, ymax, img_width, img_height, max_iter)

    fig, ax = plt.subplots(figsize=(width, height), dpi=dpi)
    ax.imshow(mandelbrot_set.T, origin='lower', cmap=cmap, extent=(xmin, xmax, ymin, ymax))
    plt.title("Mandelbrot Set")
    plt.xlabel("Re")
    plt.ylabel("Im")
    plt.show()

plot_mandelbrot(-2.0, 0.5, -1.25, 1.25, width=10, height=7.5, max_iter=256)
```

V: Program by typing

write a fancy program I can use at lectures with interesting output

ChatGPT

Let's create a visually interesting program that generates a "Mandelbrot Set" visualization. The Mandelbrot Set is a famous fractal that's visually captivating and serves as a beautiful example of complex dynamics in mathematics. It's defined in the complex plane and offers an endless boundary that's both intricate and self-similar.

The code below will use Python and Matplotlib to plot the Mandelbrot Set. This example could serve as a fascinating topic during a lecture, illustrating the intersection of mathematics, programming, and art.

```
import numpy as np
import matplotlib.pyplot as plt

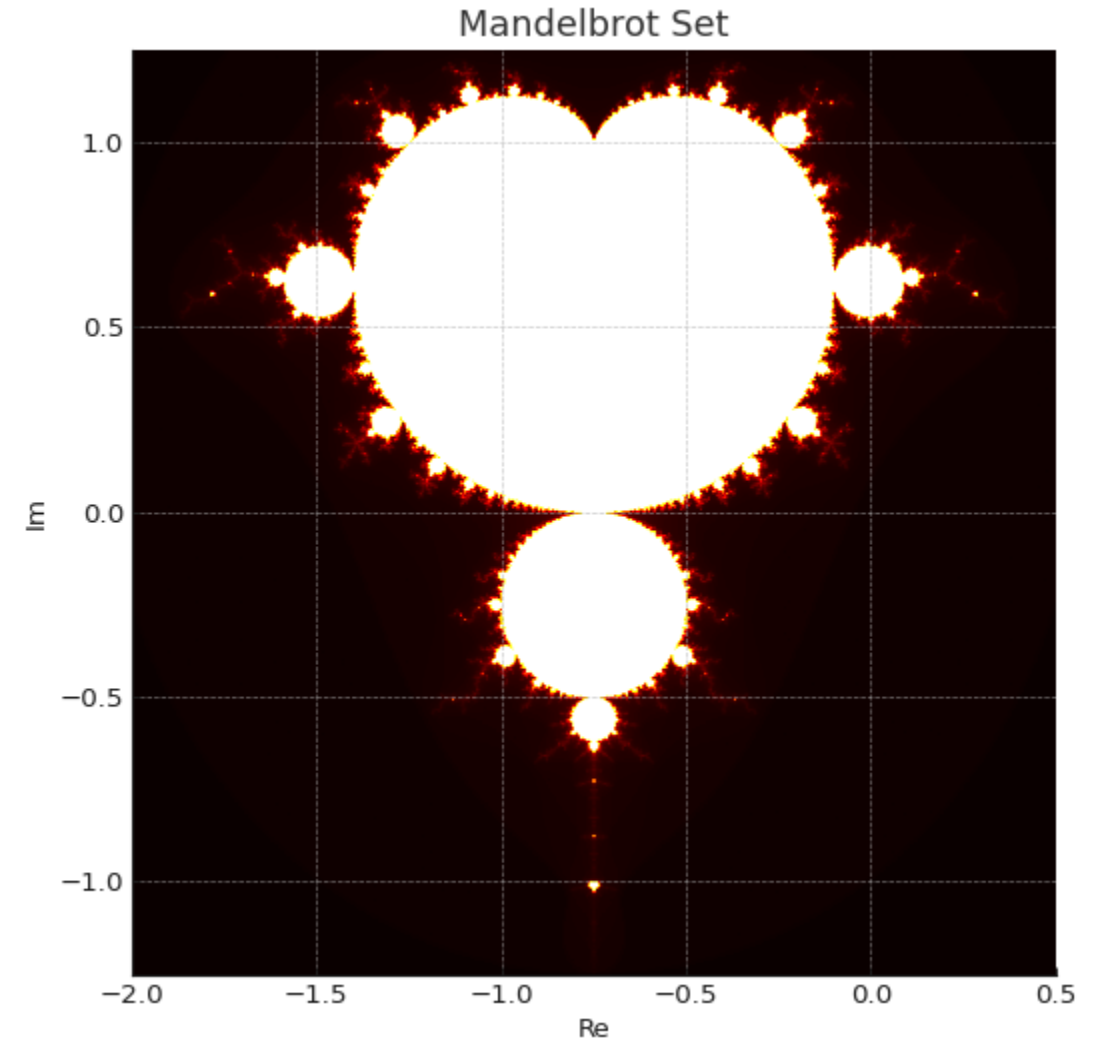
def mandelbrot(c, max_iter):
    z = c
    for n in range(max_iter):
        if abs(z) > 2:
            return n
        z = z*z + c
    return max_iter

def mandelbrot_set(xmin, xmax, ymin, ymax, width, height, max_iter):
    r1 = np.linspace(xmin, xmax, width)
    r2 = np.linspace(ymin, ymax, height)
    return (r1, r2, np.array([[mandelbrot(complex(r, i), max_iter) for r in r1] for i in r2]))

def plot_mandelbrot(xmin, xmax, ymin, ymax, width=10, height=7, max_iter=256, cmap='hot'):
    dpi = 80
    img_width = dpi * width
    img_height = dpi * height
    x, y, mandelbrot_set = mandelbrot_set(xmin, xmax, ymin, ymax, img_width, img_height, max_iter)

    fig, ax = plt.subplots(figsize=(width, height), dpi=dpi)
    ax.imshow(mandelbrot_set.T, origin='lower', cmap=cmap, extent=(xmin, xmax, ymin, ymax))
    plt.title("Mandelbrot Set")
    plt.xlabel("Re")
    plt.ylabel("Im")
    plt.show()

plot_mandelbrot(-2.0, 0.5, -1.25, 1.25, width=10, height=7.5, max_iter=256)
```



Superhuman coding?

Past Mock Assessments

 Amazon On-Site Interview	Completed
 Amazon Phone Interview	Completed
 Amazon Online Assessment	Completed

 **Amazon - On-Site Interview**
Completed ⓘ January 6, 2023 2:28 PM

 Your interview score of **10/10** beats **100%** of all users. ⓘ

Time Spent: 3 minutes 59 seconds
Time Allotted: 2 hours



A histogram showing the distribution of scores for the Amazon On-Site Interview. The x-axis is labeled 'score' and ranges from 0 to 10. The y-axis is labeled '# of scores' and ranges from 0 to 800. The bars are light blue, with the bar for score 10 being highlighted in orange. The distribution is roughly bell-shaped, peaking at score 6 with approximately 800 scores.

score	# of scores
0	280
1	500
2	400
3	450
4	650
5	800
6	800
7	650
8	300
9	100
10	100

▶ ⏪ 🔊 33:11 / 48:31



Osnovna navodila za delo z besedili

- Izberete tip besedila (članek, poročilo, sporočilo pacientu ...) in napišete
- Podate kakšen soroden primer z ukazom: samo zapomni si
- Določite tip besedila, recimo “prijazno navodilo” ali “strog inženirski jezik”
- Določite vlogo, npr. “si zdravnik” ali “napisala bova znanstveni članek”
- Lahko mu date nekaj iztočnic, idej, osnutek ...
- Naročite, naj izdelava po vaših navodilih besedilo primerne dolžine
- če niste zadovoljni s celoto ali delom (običajno), sporočite, kaj naj spremeni in kako
- ... po nekaj interakcijah sproti shranjujete primerne dele in naročate popravke
- ... sestavljeno besedilo naj še enkrat pregleda in popravi samo napake ali velike slabosti
- Na koncu preverite podatke npr. z Googlom in dodelate ročno

- Pogovarjate se s programom kot s človekom – asistentom, npr. “naredi enako; podobno”



Pisanje povzetka za revijo

Q: napiši slovenski povzetek v dolžini 25 besed iz:

In the era of new media, the abundance of internet information poses a difficulty for users to find media that is both relevant and captivating. Although recommending technologies has made significant progress, it still faces hurdles in dealing with concerns related to data confidentiality and, the algorithmic partiality effect. With the continuous progress of the social economy, new media and micro media are constantly emerging in multiple ways and the methods to access these media contents have become diversified as well. However, it should be noted that diverse types of media content in the era of big data also require excessive time spent in selecting effective content. In response to these demands and defects, a scenario clustering algorithm is introduced in this paper, in which the media content recommendation is taken as the breakthrough point to build a clustering model to express the effective distribution of events by analyzing the network structure and media content distribution model through the analysis of the network structure and the distribution of the media content to represent the effective distribution of events and carry out the comparison of cross-content events, to achieve the effective clustering and analysis of media content. The results of the simulation experiment indicate that the scenario clustering algorithm proposed in this paper is effective and can support the analysis of media content recommendation in multiple dimensions, to provide high-quality media

Prvi primer – začetno, z napakami

R: V dobi novih medijev obilje informacij na internetu otežuje iskanje relevantnih in privlačnih vsebin, kljub napredku priporočilnih tehnologij.

Q: opiši prispevek s tehničnim jezikom kot strokovnjak za znanstvene članke

R: V obravnavanem članku se avtorji soočajo s problematiko nasičenosti informacijskega prostora v eri novih medijev, kjer obilje dostopnih informacij na internetu predstavlja ... (v celoti)

Q: naredi povzetek prispevka v jedrnatem strokovnem jeziku v dolžini 25 besed

R: Članek uvaja algoritem za klustersko združevanje scenarijev, ki izboljšuje priporočanje medijskih vsebin ob upoštevanju varstva podatkov in algoritemске pristranskosti.

klustersko združevanje scenarijev – gručenje scenarijev

V11, 12

Prvi primer – naučeno kot prompt?

Q: Enako naredi za:

With the increasing demand for data storage and processing, data centers have become critical infrastructures. Efficient data transmission and aggregation in data centers are essential for improving performance and reducing energy consumption. This research paper presents a novel approach called DAWPM (Data Aggregation Weighted Probabilistic Model) specifically designed for data centers. DAWPM leverages probabilistic models to dynamically adjust data transmission and aggregation strategies based on network conditions, effectively mitigating congestion and improving overall system performance. The proposed model optimizes data aggregation algorithms to reduce the amount of transmitted data while maintaining data accuracy and minimizing the impact on system resources. It employs probabilistic algorithms to analyse data patterns and make informed decisions on data aggregation and transmission. Simulation results demonstrate that DAWPM outperforms existing models in terms of data accuracy, communication overhead, energy consumption, and packet loss rate. The proposed model offers a reliable and efficient solution for data transmission in data centres, enabling improved data processing, reduced network congestion, and enhanced overall system performance.

Raziskava predstavlja DAWPM, nov pristop za optimizacijo prenosa in združevanja podatkov v podatkovnih centrih, ki zmanjšuje zastoje in izboljšuje učinkovitost.



V13

Drugi primer: pisanje komunalni

User:

tole je dopis komunalni, ki ga napiši bolj vpljudno: Blesova komunala!

Spet ste mi prevrnili smetišno kišto, potem ko ste jo spraznili.

Sem vam že 3x napisal protestno pismo, pa se sploh ne menite za moje prošnje in pripombe. Vi ste živ prikaz, kako bedno je upravljanje v občinah kot ne-lokalni ne-samoupravi, kjer se kitijo lokalni šerifi in uzurpatorji. Sploh ne vem, kako bi ta problem uredil.

Drugi primer: pisanje komunalni

Spoštovani,

dovolite mi, da vas ponovno vljudno opozorim na težavo, ki sem jo zaznal pri odvozu smeti. Opazil sem, da po praznjenju smetiščnik ni bil postavljen nazaj na svoje mesto, kar je povzročilo njegovo prevrnitev. Razumem, da je lahko odvoz odpadkov včasih zahtevna naloga, a bi vseeno cenil, če bi lahko posvetili malo več pozornosti temu detajlu.

Zavedam se, da je upravljanje občinskih storitev kompleksen proces, in ne dvomim, da je vaša ekipa zavezana k opravljanju svojega dela kar se da kvalitetno. Zato verjamem, da lahko skupaj najdemo rešitev, ki bo izboljšala situacijo in preprečila nadaljnje nevšečnosti.

V preteklosti sem že poslal nekaj pripomb, ki pa morda niso dosegle pravih naslovnikov ali pa niso bile jasne. Zato bi predlagal, če je to mogoče, kratek sestanek ali razgovor z odgovorno osebo, kjer bi lahko skupaj preučili situacijo in poiskali najboljši način za izboljšavo storitve.

Zahvaljujem se vam za razumevanje in se veselim vaše odzivnosti.

S spoštovanjem, [vaše ime]

Tretji primer: pisanje pacienta – vložitev podatkov (znotraj dialoga)

Vložitev izvidov

Q: Priložil sem svoj izvid. Kaj naj naredim?

HD: Če imate zdravstvene težave, je vedno priporočljivo, da se posvetujete z zdravnikom. V vašem primeru, glede na opis simptomov, se je zdravnik odločil za nadaljnjo diagnostiko, vključno z magnetno resonanco glave, za izključitev drugih možnih vzrokov za vaše glavobole in vrtoglavice. Do rezultatov pregleda je priporočljivo nadaljevati z zmernim uživanjem alkohola, redno telesno aktivnostjo ter uporabo simptomatskega zdravljenja za lajšanje glavobolov (npr. paracetamol po potrebi). Če se vaši simptomi poslabšajo ali imate kakršna koli vprašanja ali skrbi, se posvetujte z zdravnikom ali se vrnite na pregled po opravljeni magnetni resonanci glave.

V14

Primer 4: analiza vloženega v GPT

Pristop: **ZNA VSE (samo povedati mu morate znati!)**, DAJTE MU KARKOLI, VPRAŠAJTE GA KARKOLI, POSKUSITE, (2) VPRAŠAJTE GA, ALI ZNA, KAKO SE NAREDI XYZ (3) Google

PDF, Word, slika, video, graf, knjiga, poročilo
... copy/paste ali povezava ..

Akt o umetni inteligenci – povzetek, vprašanja ...

V16

Q: Kaj je na tej sliki?

R: Na sliki je moški, ki čepi ob ležeči levinji v naravnem okolju, ki spominja na savano. Izgleda, da je moški srečen in se smeji, drži pa palico ali podoben predmet. V ozadju je še ena oseba, oblečena v safari uniformo. Okolica je zelena, s travo, drevesi in grmičevjem, kar kaže na naraven habitat velikih mačk, kot so levi.

V17



Primer 4: analiza vložene

Q: what is on this web page: <https://dis.ijs.si/mezi/>

R: The webpage appears to be the personal page of Matjaž Gams, a member of the Department of Intelligent Systems at the Jožef Stefan Institute. It features sections on selected publications, activities, positions, family, and miscellaneous topics. There's also a blog related to the National Council and information for students. The page includes personal contact information and details about various professional and academic achievements.



Personal Data:

Phone: (+386)(1) 4773 644

Fax: (+386)(1) 477 3131

E-mail: matjaz.gams@ijs.si

Address: Jozef Stefan Institute, Department of Intelligent Systems, Jamova 39, 1000 Ljubljana, Slovenia, Europe

[Poročila iz Državnega sveta- blog / Reports from the National Council of the Republic of Slovenia](#); v 3. poskusu s posvetom izpeljali novo zakonodajo o cepljenju

[Alan Turing \(in Slovene\)](#), [InLife H2020 project](#), [InLife movie](#), [InLife movie \(in Slovene\)](#), [InLife \(in Slovene\)](#), [Confidence FP7](#)

Several victories in worldwide competitions: [xPrize for Covid 2021 \(second prize 250.000\)](#); [Sussex-Huawei 2018 picture](#), [PPT in Slovene](#); [victory EvAAL 2013 \(in Slovene\)](#)

Solved several hard logical questions, e.g. [the hanging paradox](#), [the Pinnochio paradox](#)

Studying issues at the level of human, European and Slovenian civilisation: [Longivity of human civilisation](#), [Stop autonomous weapons - UN](#), [Demography - the major issue \(in Slovene\)](#)

[White book ecology \(in Slovene\)](#)

[White book demography \(in Slovene\)](#)

V18

Primer 4: analiza vloženeega

Q: what is on this web page: <https://dis.ijs.si/mezi/>

R: The webpage appears to be the personal page of Matjaž Gams, a member of the Department of Intelligent Systems at the Jožef Stefan Institute. It features sections on selected publications, activities, positions, family, and miscellaneous topics. There's also a blog related to the National Council and information for students. The page includes personal contact information and details about various professional and academic achievements.

Q: Ali moški na sliki nosi očala?

R: Na sliki moški nosi očala.



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[White book ecology \(in Slovene\)](#)

[White book demography \(in Slovene\)](#)

V19

Primer 4: analiza vložene

Q: what is on this web page: <https://dis.ijs.si/mezi/>

R: The webpage appears to be the personal page of Matjaž Gams, a member of the Department of Intelligent Systems at the Jožef Stefan Institute. It features sections on selected publications, activities, positions, family, and miscellaneous topics. There's also a blog related to the National Council and information for students. The page includes personal contact information and details about various professional and academic achievements.

Q: Ali moški na sliki nosi očala?

R: Na sliki moški nosi očala.

Q: Ali moški na sliki z levom nosi očala?

R: Na sliki, ki ste jo naložili, moški ne nosi očal.



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[White book demography \(in Slovene\)](#)

V20



vložnega

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publications, activities, positions, family, and miscellaneous topics. There's also a blog related to the National Council and information for students. The page includes personal contact information and details about various professional and academic achievements.

Q: Ali moški na sliki nosi očala?
R: Na sliki moški nosi očala.

Q: Ali moški na sliki z levom nosi očala?
R: Na sliki, ki ste jo naložili, moški ne nosi očal.



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Primer 4: analiza vložnega (ne zna/noče)

Q: Ali je moški na sliki z levom isti kot moški na spletni strani?

R: ... tega ne zna ... noče zaradi pravil o zasebnosti .. blabla



V21

Primer 4: analiza vloženega

Q: Ali je moški na sliki z levom isti kot moški na spletni strani?

R: ... tega ne zna noče zaradi pravil o zasebnosti ... **uporabite orodja za to – Google; market; generacija AI in ne samo GPTji**

V22

Primer 4: analiza vložnega



Q: Ali je moški na sliki z levom isti kot moški na spletni strain?

R: ... tega ne zna noče zaradi pravil o zasebnosti ... **uporabite orodja za to – Google; market; generacija AI in ne samo GPTji**

Policija jo je iskala desetletja, umetna inteligenca jo je našla v pol ure

<https://siol.net/novice/svet/policija-jo-je-iskala-desetletja-umetna-inteligenca-jo-je-nasla-v-pol-ure-628591>

Medtem ko je nemška policija zloglasno teroristko iskala kar tri desetletja, jo je novinar s pomočjo umetne inteligence našel v pol ure. Uporabil je program za 30 evrov, ki primerja fotografijo iskané osebe z objavljenimi fotografijami na spletu.

Primer 4: analiza vložnega

uporabite orodja za to

Policija jo je iskala desetletja, umetna inteligenca j
ure

<https://siol.net/novice/svet/policija-jo-je-iskala-desetletja-umetna-inteligenca-jo-je-nasla-v-pol-ure-628591>

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Desetletja : pol ure; prihranek??



Primer 4: analiza vloženega



Q: preberi in zapomni si:

<http://www.pisrs.si/Pis.web/pregledPredpisa?id=ZAKO3603&d-49687-s=3>

(Zakon o zemljiški knjigi)

Q: na osnovi katerih dokumentov se lahko vpiše začasna odredba v Zemljiško knjigo

R: Začasna odredba se lahko vpiše v Zemljiško knjigo na podlagi sklenjene zasebne listine, notarskega zapisa, sodne odločbe ali drugih listin, ki so pravna podlaga za vpis. V postopku mora biti priložena listina, ki ustrezno dokazuje pravico ali pravno dejstvo, ki se vpisuje. V praksi to pomeni, da se za vpis lastninske pravice na primer predloži kupoprodajna pogodba in zemljiškoknjižno dovolilo z overjenim podpisom. Za učinkovit vpis začasne odredbe so potrebne ustrezne listine, ki izpolnjujejo zakonske zahteve.

V: Primer 4: sistemska pomoč

Q: shrani del zaslona v ... (karkoli o Wordu, Excelu ... Copilot)

Press Windows logo key + Shift + S to open the Snipping Tool directly; You'll see a menu with four screenshot options: Rectangular selection: Highlight a designated area for an active window or your full screen; Freehand selection: Draw a custom shape to capture; Window: Capture the active window; Full-screen: Capture the entire screen.

After capturing your screenshot, it will be copied to your clipboard. You can paste it (press Ctrl + V) into another app if needed.

Using the Print Screen Key: The Print Screen key is usually at the top-right corner of most keyboards (may say Print Screen, PrtSc, PrtScn, or PrntScrn).

To capture your working screen: Select the window you want to screenshot. Press Alt + Print Screen. Paste (press Ctrl + V) the screenshot into an Office program or app of your choice.

To capture your entire screen: Position everything you want to copy. Press Print Screen. Paste (press Ctrl + V) the screenshot into an Office program or app.

Saving the Screenshot as an Image File: To save the screenshot directly to your desktop as an image file: Press Windows + Print Screen. Find your screenshot in PNG format by navigating to Pictures > Screenshots in your directory.

Kaj znajo GPTji

Q/A (Question and Answer): Answer user queries based on context, Provide explanations or solutions, Retrieve information from the web

Report Generation: Generate reports from data (e.g., CSV, Excel), Create charts and graphs, Export reports to PDF or other formats

Picture Manipulation: Resize images, Crop images, Apply filters (e.g., grayscale, sepia), Overlay text or graphics on images; Fibionacci v Excelu

PDF File Management: Read text from PDFs, Extract specific pages, Merge multiple PDFs, Convert PDFs to other formats (e.g., Word, TXT)

Text Processing: Tokenize text, Perform sentiment analysis, Summarize long texts

File I/O: Read and write files (e.g., CSV, JSON), Load data from external files, Save results to files

Math and Calculations: Perform basic arithmetic (addition, subtraction, multiplication, division), Calculate averages, totals, and percentages

Data Visualization: Create plots (e.g., bar charts, line charts), Display data visually

Natural Language Processing (NLP): Tokenize sentences, Remove stop words, Analyze sentiment

Error Handling: Handle exceptions gracefully and provide informative error messages

V23



V: Kaj znajo GPTji

Code Generation: Generate Python code snippets, Create functions or classes, Assist with programming tasks

Data Analysis: Perform statistical analysis, Clean and preprocess data, Calculate descriptive statistics

Web Scraping: Extract data from websites, Retrieve information from HTML pages, Automate data collection

Regular Expressions (Regex): Search and manipulate text patterns, Validate input (e.g., email addresses, phone numbers)

Time and Date Manipulation: Parse dates and times, Calculate time differences, Format dates for display

File Compression and Decompression: Create ZIP files, Extract files from archives, Handle compressed data

Database Interaction: Connect to databases (e.g., SQLite, MySQL), Execute SQL queries, Retrieve data

Machine Learning (ML): Train ML models, Perform classification or regression, Evaluate model performance

Geospatial Analysis: Work with geographic data (e.g., coordinates, maps), Calculate distances, Process data

Unit Testing: Write test cases, Validate code functionality, Ensure code quality

..... Preprosta igra

V24



Consensus: Facilitates agreement among multiple responses, aiming for a unified answer from diverse inputs.

Humanizer: Adjusts responses to be more human-like, enhancing relatability and natural interaction.

Explore: Explores a wide range of possibilities or solutions, encouraging creative and diverse outcomes.

Socratic: Designed for deep inquiries, it encourages exploration and understanding through questions.

Analyzer: Examines content for insights, patterns, and structures, offering detailed analysis.

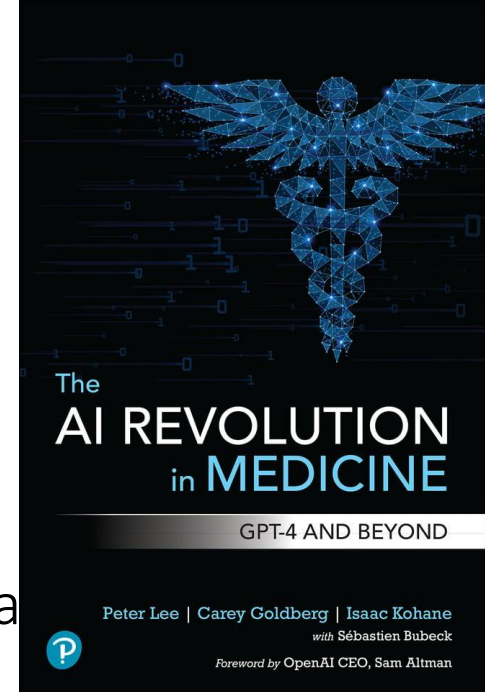
Composer: Focuses on generating coherent and creative content, such as writing, music, or code.

Translator: Translates languages with high accuracy, facilitating global communication.

Video Summarizer: a tool that automatically condenses the content of a video into a shorter version or a textual summary, highlighting the key points or scenes.

Tutor: Provides educational support, explanations, and learning resources tailored to individual needs.

Explore GPTs (subdirectory): click



V25



Hvala!
2h vs 1h

<http://dis.ijs.si>
Matjaz.gams@ijs.si

dis

IJS, maj 2024

