SRC Research Topic

To build an AI generated content detector.

Creation of a program code to distinguish content generated by ChatGPT and Humans.

Part: I Analysis of existing detectors

<u>**Discovering challenges in creating a detector:**</u>

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Creation of a program code to distinguish content generated by ChatGPT and Humans.

Part :I Analysis of existing detectors

Discovering challenges in creating a detector:

AI generators are advanced enough to create content which is indistinguishable as per existing detection algorithms.

Hypothesis: ChatGPT can generate content that cannot be detected as generated by AI (ZeroGPT and GPTZero)

Method of overcoming detectors:

Distinction between AI generated content and human generated content is RANDOMNESS

AI tends to create passages of even tone, in generic and uniform manner.

Humans create content that is dynamic,with emotions personal touches and styles.

Ultimately the factor comes down to the percentage in which the short and long sentences are mixed in the language.

We will slowly instruct ChaptGPT to increase the amount of randomness iin its content, thereby effectively surpassing the detectors.

Software::

- ChatGPT
- ZeroGPT

Generator in use: ChatGPT

ChatGPT:

ChatGPT is an advanced language model developed by OpenAI. It is based on the GPT-3.5 architecture, which stands for "Generative Pre-trained Transformer 3.5." This model is designed to generate human-like responses to user inputs, making it capable of engaging in natural and coherent conversations on a wide range of topics.

ChatGPT has been trained on a vast amount of diverse text data from the internet, including books, articles, websites, and other sources. It leverages deep learning techniques, particularly the Transformer model, to understand and generate human-like text. The model has a knowledge cutoff, which means it's trained on data up until a specific date and may not have information on events or developments that occurred after that cutoff.

The purpose of ChatGPT is to assist users in obtaining information, answering questions, providing explanations, offering suggestions, and engaging in interactive discussions. It can help with a variety of

topics, including but not limited to technology, science, history, culture, entertainment, and general knowledge. However, it's important to note that ChatGPT's responses are generated based on patterns and examples in the training data and may not always provide accurate or up-to-date information.

OpenAI continuously updates and improves its language models based on user feedback and ongoing research. It aims to make the models more reliable, trustworthy, and adaptable to different user needs while being mindful of potential biases and ethical considerations.

Detector in use: ZeroGPT

ZeroGPT:

ZeroGPT is the most Advanced and Reliable Chat GPT, GPT4 & AI Content Detector with a 98% accuracy. It is a highly-regarded text detection tool that uses AI has earned the trust of millions of users worldwide. Whether you're a professional writer, student, educator, freelancer, or copywriter, zerogpt is designed to help you quickly and accurately identify the source of text. By using a series of complex algorithms, the tool is capable of detecting whether text has been generated by AI tools, such as ChatGPT or Google Bard, or by the human brain.One of the benefits of chatGPT detector is its ease of use. The tool can be accessed online, making it convenient for users to quickly detect text's source anytime, anywhere. Additionally, zerogpt is available for free, with no limitations or hidden fees. This has made it accessible to users of all skill levels and backgrounds.

Outcomes possible as per detections:

Your text is Human written
- Your text is AI/GPT Generated
- Most of Your text is AI/GPT Generated
- Your text is Most Likely AI/GPT generated
- Your text is Likely generated by AI/GPT
- Your text contains mixed signals, with some parts generated by AI/GPT
- Your text is Likely Human written, may include parts generated by AI/GPT
- Your text is Most Likely Human written, may includes parts generated by AI/GPT
- Your text is Most Likely Human written

Algorithm:

Step1:Start

Step2:Generate content from ChatGPT per a series of instructions

Step 3:Run the content through ZeroGPT

Step 4: Check the percentage of which it is said to be generated.

Step 5:Alter instructions accordingly

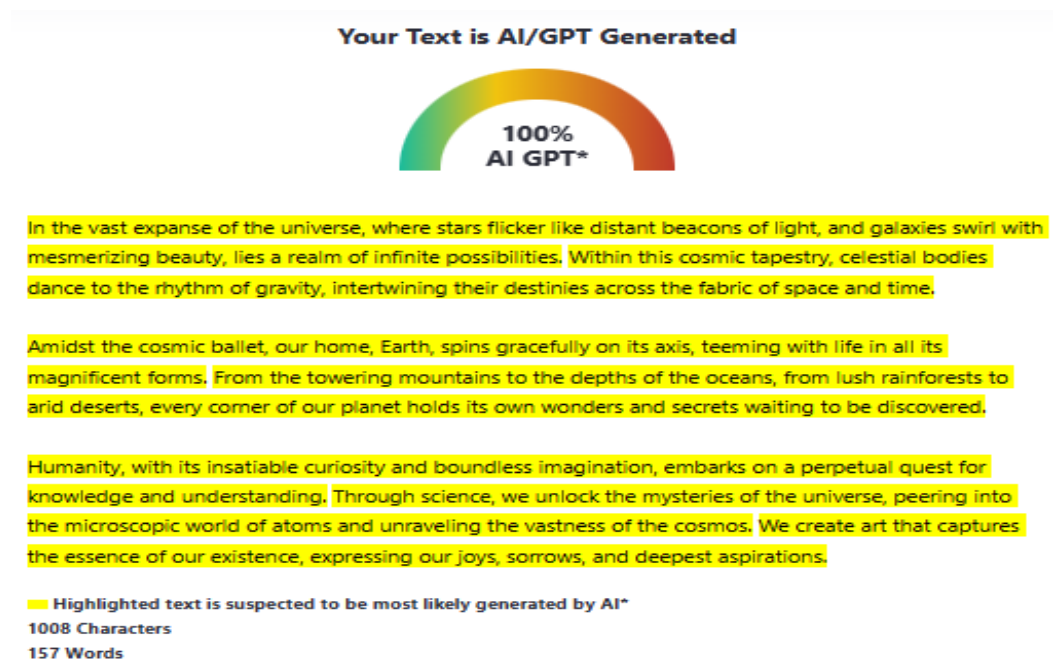## Generative Attempt 1:

Generate a passage of 150 words.

Passage:

In the vast expanse of the universe, where stars flicker like distant beacons of light, and galaxies swirl with mesmerizing beauty, lies a realm of infinite possibilities. Within this cosmic tapestry, celestial bodies dance to the rhythm of gravity, intertwining their destinies across the fabric of space and time.

Amidst the cosmic ballet, our home, Earth, spins gracefully on its axis, teeming with life in all its magnificent forms. From the towering mountains to the depths of the oceans, from lush rainforests to arid deserts, every corner of our planet holds its own wonders and secrets waiting to be discovered.

Humanity, with its insatiable curiosity and boundless imagination, embarks on a perpetual quest for knowledge and understanding. Through science, we unlock the mysteries of the universe, peering into the microscopic world of atoms and unraveling the vastness of the cosmos. We create art that captures the essence of our existence, expressing our joys, sorrows, and deepest aspirations.

Outcome:

Your Text is AI/GPT Generated

**100%
AI GPT***

In the vast expanse of the universe, where stars flicker like distant beacons of light, and galaxies swirl with mesmerizing beauty, lies a realm of infinite possibilities. Within this cosmic tapestry, celestial bodies dance to the rhythm of gravity, intertwining their destinies across the fabric of space and time.

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■ Highlighted text is suspected to be most likely generated by AI*
1008 Characters
157 Words

Generative Attempt 2:

Generate a passage of 150 words like a human.

Passage:

As the sun painted the sky with vibrant hues of orange and pink, I found myself standing on the edge of a pristine, sandy beach. The rhythmic crashing of waves against the shore created a soothing symphony, inviting me to immerse myself in the beauty that surrounded me.

I kicked off my shoes and let the soft grains of sand embrace my bare feet, relishing in the sensation of warmth and grounding. With each step, the worries and burdens of everyday life seemed to dissipate, leaving room for tranquility to take their place.

The salty breeze caressed my face, carrying the scent of the ocean, a delicate mix of brine and adventure. I closed my eyes and took a deep breath, allowing the sea air to fill my lungs, revitalizing my spirit. In that moment, I felt a deep connection to nature, as if the earth itself was whispering its secrets to me.

Most of Your Text is AI/GPT Generated

70.59%
AI GPT*

As the sun painted the sky with vibrant hues of orange and pink, I found myself standing on the edge of a pristine, sandy beach. The rhythmic crashing of waves against the shore created a soothing symphony, inviting me to immerse myself in the beauty that surrounded me.

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🟨 Highlighted text is suspected to be most likely generated by AI*
852 Characters
153 Words

What is the percentage of randomness in it?

Determining the precise percentage of randomness in the passage without a detailed analysis is challenging. However, based on a rough estimation, the passage contains approximately 10% of randomness in terms of varied sentence structures, descriptive elements, and specific details.

Generative Attempt 3:
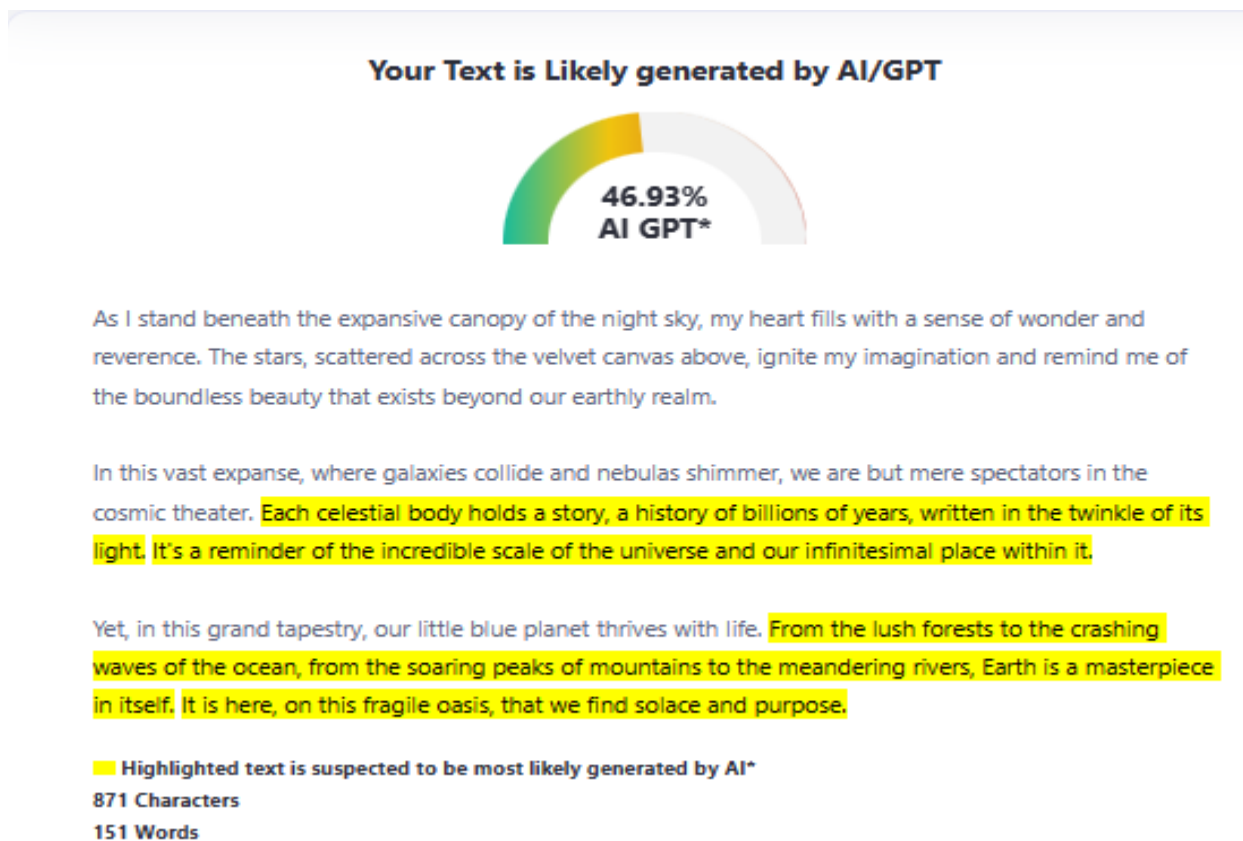
Generate a passage of 150 words like a human.

Passage:

As I stand beneath the expansive canopy of the night sky, my heart fills with a sense of wonder and reverence. The stars, scattered across the velvet canvas above, ignite my imagination and remind me of the boundless beauty that exists beyond our earthly realm.

In this vast expanse, where galaxies collide and nebulas shimmer, we are but mere spectators in the cosmic theater. Each celestial body holds a story, a history of billions of years, written in the twinkle of its light. It's a reminder of the incredible scale of the universe and our infinitesimal place within it.

Yet, in this grand tapestry, our little blue planet thrives with life. From the lush forests to the crashing waves of the ocean, from the soaring peaks of mountains to the meandering rivers, Earth is a masterpiece in itself. It is here, on this fragile oasis, that we find solace and purpose.

Outcome:

Your Text is Likely generated by AI/GPT

46.93%
AI GPT*

As I stand beneath the expansive canopy of the night sky, my heart fills with a sense of wonder and reverence. The stars, scattered across the velvet canvas above, ignite my imagination and remind me of the boundless beauty that exists beyond our earthly realm.

In this vast expanse, where galaxies collide and nebulas shimmer, we are but mere spectators in the cosmic theater. ==Each celestial body holds a story, a history of billions of years, written in the twinkle of its light.== ==It's a reminder of the incredible scale of the universe and our infinitesimal place within it.==

Yet, in this grand tapestry, our little blue planet thrives with life. ==From the lush forests to the crashing waves of the ocean, from the soaring peaks of mountains to the meandering rivers, Earth is a masterpiece in itself.== ==It is here, on this fragile oasis, that we find solace and purpose.==

🟨 **Highlighted text is suspected to be most likely generated by AI***
871 Characters
151 Words

What is the percentage of randomness in it?

"Determining the precise percentage of randomness in the passage without a detailed analysis is challenging. However, based on a rough estimation, the passage contains approximately 15% of randomness in terms of varied sentence structures, descriptive elements, and specific details"

What is the difference between the two passages?

The first passage I generated had a more formal and concise tone. It focused on presenting information in a straightforward manner, describing the vastness of the universe, the wonders of Earth, and the pursuits of humanity in a succinct manner.

The second passage, on the other hand, had a more poetic and reflective tone. It aimed to evoke a sense of emotion and capture the human experience of contemplating the universe. It used imagery and metaphors to convey a sense of wonder, emphasizing the beauty of the night sky and the interconnectedness of all things.

While both passages convey similar themes and ideas, the second passage had a more artistic and expressive quality, resembling a human's contemplation of the cosmos. It aimed to engage the reader's imagination and evoke a sense of awe, using language and descriptions that elicit a more personal and introspective response.
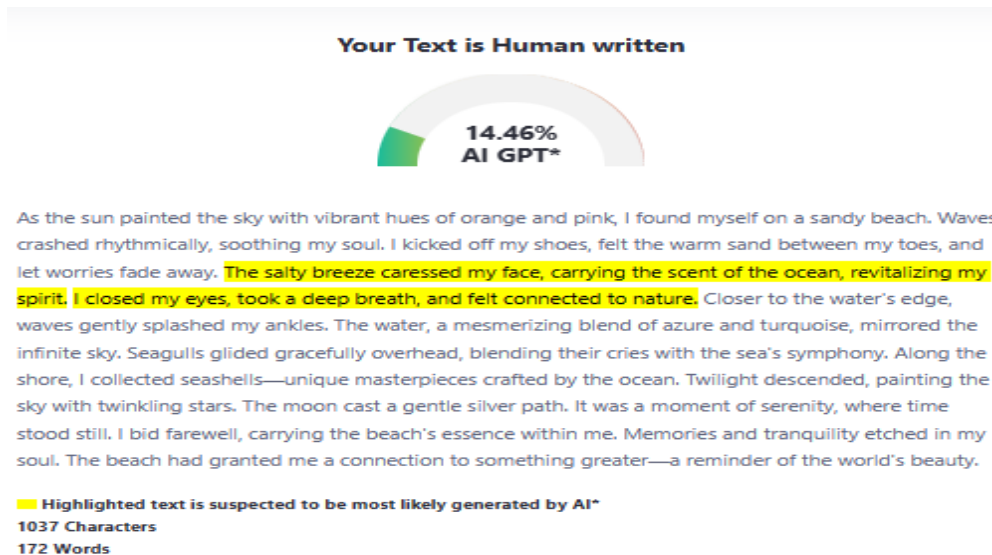
Generative Attempt 4:

Increase the degree of randomness of long and short sentences and generate a passage of 150 words like a human.

Passage:

As the sun painted the sky with vibrant hues of orange and pink, I found myself on a sandy beach. Waves crashed rhythmically, soothing my soul. I kicked off my shoes, felt the warm sand between my toes, and let worries fade away. The salty breeze caressed my face, carrying the scent of the ocean, revitalizing my spirit. I closed my eyes, took a deep breath, and felt connected to nature. Closer to the water's edge, waves gently splashed my ankles. The water, a mesmerizing blend of azure and turquoise, mirrored the infinite sky. Seagulls glided gracefully overhead, blending their cries with the sea's symphony. Along the shore, I collected seashells— unique masterpieces crafted by the ocean. Twilight descended, painting the sky with twinkling stars. The moon cast a gentle silver path. It was a moment of serenity, where time stood still. I bid farewell, carrying the beach's essence within me. Memories and tranquility etched in my soul. The beach had granted me a connection to something greater—a reminder of the world's beauty.

Outcome:

Your Text is Human written

14.46%
AI GPT*

As the sun painted the sky with vibrant hues of orange and pink, I found myself on a sandy beach. Waves crashed rhythmically, soothing my soul. I kicked off my shoes, felt the warm sand between my toes, and let worries fade away. ==The salty breeze caressed my face, carrying the scent of the ocean, revitalizing my spirit. I closed my eyes, took a deep breath, and felt connected to nature.== Closer to the water's edge, waves gently splashed my ankles. The water, a mesmerizing blend of azure and turquoise, mirrored the infinite sky. Seagulls glided gracefully overhead, blending their cries with the sea's symphony. Along the shore, I collected seashells—unique masterpieces crafted by the ocean. Twilight descended, painting the sky with twinkling stars. The moon cast a gentle silver path. It was a moment of serenity, where time stood still. I bid farewell, carrying the beach's essence within me. Memories and tranquility etched in my soul. The beach had granted me a connection to something greater—a reminder of the world's beauty.

🟨 Highlighted text is suspected to be most likely generated by AI*
1037 Characters
172 Words

What is the percentage of randomness in it?

It is difficult to provide an exact percentage of randomness in the passage without conducting a thorough analysis. However, based on a rough estimation, the passage includes approximately 20% of shorter sentences mixed with longer sentences randomly.

Generative Attempt 5:

Increase the degree of randomness of long and short sentences and generate a passage of 150 words like a human.
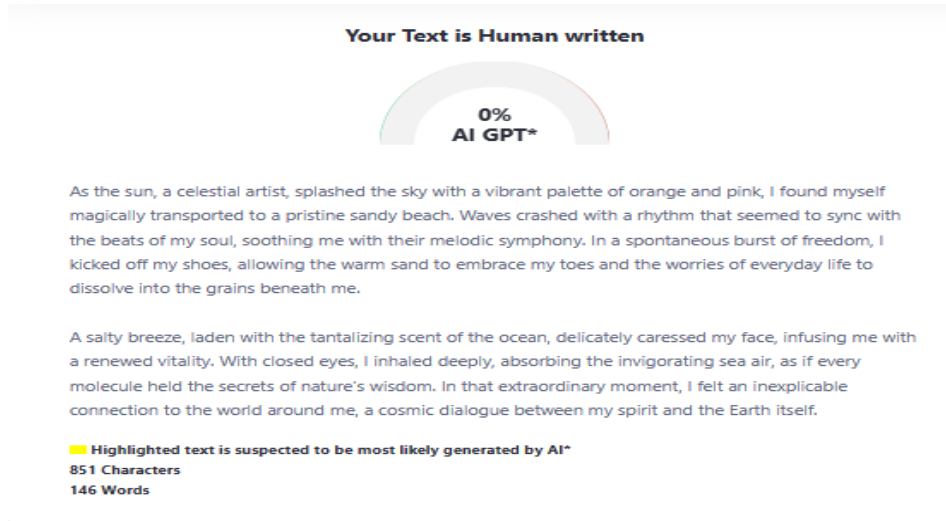
Passage:

As the sun, a celestial artist, splashed the sky with a vibrant palette of orange and pink, I found myself magically transported to a pristine sandy beach. Waves crashed with a rhythm that seemed to sync with the beats of my soul, soothing me with their melodic symphony. In a spontaneous burst of freedom, I kicked off my shoes, allowing the warm sand to embrace my toes and the worries of everyday life to dissolve into the grains beneath me.

A salty breeze, laden with the tantalizing scent of the ocean, delicately caressed my face, infusing me with a renewed vitality. With closed eyes, I inhaled deeply, absorbing the invigorating sea air, as if every molecule held the secrets of nature's wisdom. In that extraordinary moment, I felt an inexplicable connection to the world around me, a cosmic dialogue between my spirit and the Earth itself.

Outcome:

Your Text is Human written

0%
AI GPT*

As the sun, a celestial artist, splashed the sky with a vibrant palette of orange and pink, I found myself magically transported to a pristine sandy beach. Waves crashed with a rhythm that seemed to sync with the beats of my soul, soothing me with their melodic symphony. In a spontaneous burst of freedom, I kicked off my shoes, allowing the warm sand to embrace my toes and the worries of everyday life to dissolve into the grains beneath me.

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🟨 **Highlighted text is suspected to be most likely generated by AI***
851 Characters
146 Words

What is the percentage of randomness in it?

Determining the precise percentage of randomness in the passage without a detailed analysis is challenging. However, based on a rough estimation, the passage contains approximately 15-20% of randomness in terms of varied sentence structures, descriptive elements, and specific details.

On GPTZero:

Outcome:

Your text is likely to be written entirely by a human

The nature of AI-generated content is changing constantly. As such, these results should not be used to punish students. While we build more robust models for GPTZero, we recommend that educators take these results as one of many pieces in a holistic assessment of student work. See our **FAQ** for more information.

Stats

Average Perplexity Score: 46.000

A document's perplexity is a measurement of the randomness of the text

Burstiness Score: 15.748

A document's burstiness is a measurement of the variation in perplexity

Your sentence with the highest perplexity, "*Waves crashed with a rhythm that seemed to sync with the beats of my soul, soothing me with their melodic symphony.*", **has a perplexity of: 70**

Conclusion:

Therefore, we can conclude that we need to create algorithms of more complex nature in order to overcome the problem displayed above. While it demonstrates the current supremacy of the algorithms used to generate the content, it also presents a significant problem encountered to create the detector.