

# PLATO

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## INTRODUCTION

The PLATO Magazine is being issued in the context of the STEAME STUDENTS - European Networking of STEAME School Students for Exchange and Co-creation ERASMUS+ project (2021-2-CY01-KA210-SCH-000047923). Students, members of the European Networking of STEAME School Students, are the contributors of this digital magazine by submitting their articles and stories for publishing.

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### The PLATO Magazine Team





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## How do search engines work?

by Robin Schulze-Tammena (in collaboration with ChatGPT)



Search engines are an essential part of our daily lives, allowing us to find information quickly and easily on the internet. They are sophisticated software programs that index billions of web pages and return relevant results based on user queries. But even though we use them incredibly frequently most people don't know how they work. In this article, we will take a closer look at how search engines work, from the initial crawling of web pages to the final display of search results.

### Crawling

The first step in the process of indexing the internet is crawling. Search engine crawlers, also known as bots or spiders, are automated programs that browse the web, following links from one web page to another. They start with a list of URLs and use algorithms to find new links on each page they visit.

The crawlers collect data about each web page, including the text, images, and links. They also follow any embedded media, such as videos and audio files, and add them to their index. This data is then stored on the search engine's servers, where it can be analyzed and indexed.

These crawlers never stop collecting data, by visiting new and revisiting old websites, still it is estimated that no search engine has been able to index more than 10% of the available information. Even Google with an index of around 130 trillion entries probably hasn't surpassed these 10%.

### Indexing

After crawling, the search engine indexes the web pages it has collected. Indexing involves the organization of the information collected during crawling, making it easier to retrieve relevant results for specific queries.

The search engine creates a database of all the words and phrases on each web page, along with the location of the words on the page. It also considers the context of the words and phrases, including synonyms, related terms, and the frequency of their use. This information is used to build an index of all the pages that have been crawled, which is then stored on the search engine's servers.

## Ranking

Once a user enters a query, the search engine uses complex algorithms to determine the most relevant results. The algorithms take into account many factors, including the user's search history, location, and the context of the query.

The search engine considers several ranking factors when determining which pages to display, including the relevance of the content to the query, the quality of the website, and the popularity of the website. Popularity is measured by the number and quality of links pointing to the website, as well as the number of shares and likes it has received on social media. Another factor taken into account is the uniqueness of the page, if you were to have an online marketplace, you probably would be better off to not copy the product descriptions from the manufacturers and instead write your own. That's because if there are many pages with similar content only one will be displayed.

## Displaying Results

After the ranking is completed, the search engine displays the results to the user. The results are usually displayed in order of relevance, with the most relevant results appearing at the top of the page.

The search engine displays a snippet of information from each web page, including the title, meta description, and URL. This information helps the user to quickly assess the relevance of the result and decide whether to click through to the page.

## Paid Search Results

In addition to the organic search results, search engines also display paid search results. These are advertisements that appear at the top of the search results page, marked with a label indicating that they are ads.

Paid search results are displayed based on a bidding system, where advertisers bid on specific keywords related to their product or service. Advertisers bid on keywords, and the highest bidder gets the top spot.

Search engines use several factors to determine the ranking of paid search results, including the relevance of the ad to the user's query and the quality of the landing page the ad links to.

## Conclusion

In conclusion, search engines play a crucial role in our daily lives, allowing us to quickly and easily find information on the internet. From crawling web pages to indexing and ranking search results, the search engine's complex algorithms use a variety of factors to determine the relevance and quality of the results displayed.

As search engines continue to evolve and become more sophisticated, it is essential for website owners and digital marketers to understand how they work and how to optimize their content to

improve their rankings. By providing relevant and high-quality content and building strong backlinks, website owners can improve their rankings and drive more traffic to their site.

Sources:

<https://www.youtube.com/watch?v=3CqJRdJetiw>

<https://developers.google.com/search/docs/fundamentals/how-search-works?hl=de>

# Exploring the Beauty and Complexity of the Sierpinski Triangle

by Anna Zieba

## Introduction

Fractals are fascinating objects of study that exhibit self-similarity at different scales. One of the most famous fractals is the Sierpinski Triangle, which has applications in various fields such as mathematics, computer science, and art. In this article, we will explore the beauty and complexity of the Sierpinski Triangle and its applications in education.



Figure 1 Evolution of the Sierpinski triangle with 5 iterations

## Mathematical Properties

The Sierpinski Triangle has many interesting mathematical properties that make it a valuable tool for education. In mathematics, the Sierpinski Triangle is used to teach concepts such as recursion, iteration, self-similarity, and fractal dimension. Students can explore these concepts through hands-on activities such as constructing the Sierpinski Triangle using paper or other materials.



Figure 2 Sierpinski Triangle formed by students in Krakow

The photo captures the final event of the "Fractal for the Centenary" project, held on May 30th 2019 at the Krakow Blonia. Thousands of students from the Lesser Poland gathered to form a Sierpinski Triangle.

### Programming

Programming fractal patterns using the Sierpinski Triangle is an excellent way to teach computational thinking and problem-solving skills. One popular way to program the Sierpinski Triangle is using the graphics module in Python. Students can write code to draw the Sierpinski Triangle at different levels of recursion, experimenting with colors and angles to create unique visual effects. Programming the Sierpinski Triangle can also help students develop a deeper understanding of algorithms and data structures.

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

def sierpinski(x, y, size, depth):
    if depth == 0:
        # Draw an equilateral triangle
        xs = [x, x + size / 2, x + size]
        ys = [y, y + np.sqrt(3) / 2 * size, y]
        plt.fill(xs, ys, "k")
    else:
        # Recursively draw smaller triangles
        sierpinski(x, y, size / 2, depth - 1)
        sierpinski(x + size / 2, y, size / 2, depth - 1)
        sierpinski(x + size / 4, y + np.sqrt(3) / 4 * size, size / 2, depth - 1)

# Set up the plot
plt.figure(figsize=(6, 6))
plt.axis("equal")
plt.axis("off")

# Generate and plot the Sierpinski Triangle
sierpinski(0, 0, 1, 3)

# Show the plot
plt.show()
```

*Figure 3 Python code to generate a Sierpinski Triangle fractal using recursion and matplotlib plotting*

### Art and Design

The Sierpinski Triangle can be used as a template for creating sculptures or patterns, either by hand or using digital tools. The fractal patterns of the Sierpinski Triangle can inspire creativity and innovation in design, as well as provide opportunities to explore the relationship between



mathematics and art. Students can create their own Sierpinski Triangle art pieces, experimenting with different materials and techniques.

### Applications in Other Fields of Education

The Sierpinski Triangle has applications in other education fields such as physics, architecture, and biology. In physics, the Sierpinski Triangle can be used to model the structure of certain materials or the fractal nature of some physical phenomena. In architecture, the Sierpinski Triangle can be used to design buildings with intricate fractal patterns. In biology, the Sierpinski Triangle can be used to model the branching patterns of certain biological systems, such as blood vessels or bronchial tubes. By exploring these applications, students can gain a deeper understanding of the interconnectedness of different fields.

### Conclusion

The Sierpinski Triangle is a valuable tool for education that can inspire curiosity, creativity, and innovation. Whether through mathematics, programming, art and design, or other approaches, exploring the beauty and complexity of the Sierpinski Triangle can provide a rich and rewarding experience for students and educators alike. Incorporating the Sierpinski Triangle into education can help students develop a deeper understanding of different fields and their interconnectedness, while also fostering critical thinking and problem-solving skills.

## STEAME & ChatGPT

by Tzachristas Georgios - (IMO Medalist)

### Introduction

STEAME education stands for Science, Technology, Engineering, Arts, Mathematics, and Ethics. In order to encourage critical thinking, problem-solving, creativity, and innovation, this method of teaching integrates these topics. Due to its effectiveness in preparing students for the quickly evolving technological landscape, STEAME education has become more and more popular in recent years. We will look at how OpenAI's large language model ChatGPT is advancing STEAME education in this article.

### What is ChatGPT?

Modern language model called ChatGPT was created by OpenAI. Its name is the acronym for Chat Generative Pretrained Transformer. It responds to text-based queries and produces human-like responses by using deep learning algorithms to analyze and comprehend natural language. To learn the nuances of human language, ChatGPT was trained on a sizable dataset of text that included books, articles, and online content.

### How is ChatGPT innovating in STEAME education?

ChatGPT is revolutionizing STEAME education in several ways.

Here are some of the ways ChatGPT is making a difference:

### Personalized Learning

One of ChatGPT's main advantages in STEAME education is its capability to offer individualized learning opportunities. Students can communicate with an AI-based tutor through ChatGPT, who can offer individualized comments and advice based on their specific learning needs. This enables students to learn at their own pace and grasp difficult ideas in a way that works for their particular learning preferences.

### Enhanced Collaboration

ChatGPT encourages student collaboration as another way of innovating in STEAME education. Students can collaborate on projects and assignments using ChatGPT to improve communication between them. This fosters the growth of collaborative abilities, which are crucial in real life.

### Real-World Applications

Also, ChatGPT aids in bridging the gap between academic learning and practical applications. ChatGPT can assist students in comprehending how STEAME topics are used in practice by simulating real-world settings. For instance, ChatGPT can assist students in creating and simulating a robot that can carry out a certain operation, like putting together a car. Students benefit from seeing the real-world implications of what they study in the classroom thanks to this practical experience. Also, ChatGPT can assist students in comprehending how mathematics is used in everyday life. For instance, it can be used to teach students about the applications of mathematics in the fields of finance, engineering, and computer science.

### Interactive Learning

ChatGPT is a fantastic tool for interactive learning because of its conversational interface. Students can test their comprehension of difficult ideas by asking questions and getting prompt answers. Students who are engaged and motivated are more likely to acquire and remember information thanks to this interactive learning strategy.

### Multimodal Learning

Supporting multimodal learning is another way that ChatGPT is advancing STEAME education. This means that a combination of text, images, videos, and audio can be used to teach students. For instance, ChatGPT can give students visual aids, such graphs or diagrams, that assist in explaining difficult concepts to them. This multimodal approach to learning makes it easier for pupils to comprehend and retain information by allowing for a variety of learning styles.

### Enhanced Creativity

By giving students a place to express their imagination, ChatGPT encourages creativity in STEAME education. Students may think creatively and develop original answers to challenging situations by using ChatGPT to spark thoughts.

### Improved Visualisation

ChatGPT can assist students in developing their ability to visualize abstract artistic ideas like color theory, composition, and design. Students can utilize ChatGPT, for instance, to learn about color theory and how to make patterns that are aesthetically pleasing and arouse particular emotions.

### Interactive Critique

Students can obtain feedback on their creative work during interactive critique sessions facilitated by ChatGPT. For instance, students can upload their creative works or design projects and get helpful criticism from ChatGPT on things like composition, color scheme, and visual impact.

## Improved Understanding of Mathematical concepts

ChatGPT's logical explanations and visualizations can aid students in understanding difficult mathematical ideas. Students can use ChatGPT to request an easy-to-understand explanation of mathematical equations, formulas, and concepts.

## Problem-Solving Skills in Mathematics

By giving students difficult mathematics questions to solve, ChatGPT can assist students in developing their problem-solving abilities. ChatGPT allows for the creation of practice problems and the instant evaluation of student solutions.

## Examples of ChatGPT in STEAME education

Let's take a look at some examples of how ChatGPT is being used in STEAME education:

### STEM Learning

Students can use ChatGPT to learn difficult STEM concepts like physics, chemistry, and math. For instance, students can ask ChatGPT to explain a particular equation or concept, and ChatGPT will do so in an understandable manner. Additionally, ChatGPT can offer examples of how STEM concepts are used in the real world, making it simpler for students to understand how what they are learning is put to use.

### Education in Robotics

By simulating real-world situations, ChatGPT can assist students in learning about robotics. For instance, students can use ChatGPT to create and simulate a robot that can carry out a particular task, like putting together an engine. To help students refine their designs and comprehend the underlying STEAME principles involved in robotics, ChatGPT can offer advice and feedback.

### Coding Education

Additionally, coding and programming concepts can be taught using ChatGPT. To learn programming languages like Python, Java, or C++, students can use ChatGPT. ChatGPT can give immediate feedback on logical and syntax errors in code, enabling students to fix their errors and grow from them. ChatGPT can also give actual examples of how code is applied in fields like artificial intelligence, game development, and web development.

### Environmental Science Education

Through the simulation of real-world situations, ChatGPT can assist students in learning about environmental science. For instance, students can use ChatGPT to design and model how various environmental policies will affect the amount of air pollution in a city. Students can benefit from

advice and criticism from ChatGPT to better understand the concepts of environmental science at stake and how they are applied in real-world settings.

### Graphic Design Education

By giving students immediate feedback on their designs, ChatGPT can aid in their learning of graphic design. Students can upload their artwork to ChatGPT for feedback on how to enhance elements like the color scheme, layout, and typography.

### Creative Writing Education

Students can use ChatGPT to hone their creative writing abilities. ChatGPT allows students to create writing prompts and receive comments on their storytelling, grammar, and writing styles.

### Music Education

Students can learn about music theory by simulating musical compositions with ChatGPT. Students can use ChatGPT to compose music, experiment with it, and get feedback on elements like rhythm, melody, and harmony.

### Data Science Education

By giving students access to a real-world dataset to work with, ChatGPT can assist students in learning about data science. Students can learn about topics like machine learning and statistical analysis by using ChatGPT to explore and analyze data.

### Calculus Education

By offering simple visualizations of challenging equations, ChatGPT can assist students in learning calculus. Students can explore calculus concepts like limits, derivatives, and integrals using ChatGPT and get immediate feedback on how well they are understanding them.

### Geometry Education

ChatGPT offers interactive simulations of geometrical figures and shapes that can assist students in learning about geometry. Students can explore topics like angles, lines, and shapes using ChatGPT to learn more about geometrical concepts.

### Conclusion

ChatGPT is a game-changer for STEAME education, in my opinion. It is an invaluable tool for both teachers and students due to its capacity to offer personalized learning experiences, foster collaboration, replicate real-world situations, promote interactive learning, and support



multimodal learning. By equipping students with the abilities and knowledge required to be successful in the STEAME fields, ChatGPT is assisting in preparing them for the technological environment that is undergoing rapid change. We can anticipate even more innovation in STEAME education as ChatGPT develops and gets better.



## Multiple dimensions in math-learning space

*by José Núñez Sánchez*

Many students today question the usefulness of certain school subjects in everyday life. While teaching in schools should evolve to align with the changing demands of the world, the current system can often be transformed rather than replaced entirely.

Mathematics is one of the most criticised subjects by students. It is seen as something abstract that wanders too much and is far from practical life. In addition, other characteristics that relate to this subject are the mechanicity of the procedures, the complexity for the "born bad" student and how distant it is from the modern school model. However, from my experience with this subject, these features are far from reality. But for that, I must explain how I have come to enjoy all the benefits that mathematics brings me.

### MY DISCOVERY OF MATHEMATICS

I have always shown an interest in challenges that tested my ingenuity. Therefore, from a very early age I realised that I could compete with myself in mathematics. This eagerness to "fight" against problems and look for my best version of myself led me to take part in "ESTALMAT" (Stimulation of the Talent in Mathematics) and the Thales Math Olympiads. I enjoyed both events, but they gave me an incomparable experience that has led me to different projects with other students. Each of these experiences has provided me with different "dimensions" of mathematics.

### MATHEMATICS AS AN INSTRUMENT FOR WORKING ON CREATIVITY

In all mathematical environments it is clear that this subject is a very creative discipline. ESTALMAT cultivates ingenuity by bringing together 25 young people at a university in Andalusia for over 40 different sessions spanning 2 years. In the Olympics, each problem is different and having the tools to solve it does not guarantee success, just as the absence of some of them does not condemn you to failure.

Another activity that encourages mathematical creativity in my city is TIMM (Training on Ingenuity in Math in Málaga), coordinated by Professor Cristina Draper. She states that "the intention with the workshop is to introduce students to science in a way that is different from the academic and closer to the real one, in that not everything is done, it is not always predictable and, most important, the path is not unique". It is undeniable that mathematical problems are some of the challenges that require the most creativity. That is why, in terms of education, the abuse of mechanical and repetitive exercises should be abandoned in favour of think-outside-the-box exercises.

## MATHEMATICS AS A TOOL FOR EVERYDAY LIVE

From shopping at the supermarket to taking out a bank mortgage: numbers are all around us in contemporary society. But what escapes us on countless occasions is that mathematics goes beyond numbers. By understanding deeper concepts, which are often not found in academic curricula, we can find optimal solutions to fix a wobbly table, wrap birthday presents, and pack a suitcase efficiently... Mathematical thinking is present in everyday life, and recognizing its existence can help us understand many simple actions.

In connection with what I mentioned earlier about creativity, one of the various sessions I received in the ESTALMAT project was entitled "Mathematical cooking". I was particularly amazed at how an apple can be cut in half to make it stand upright simultaneously. Moreover, this method helped to bite more easily, to avoid wasting part of the fruit and to prevent oxidation. It seems incredible, doesn't it? The secret lies in a mathematical artifice.

## MATHEMATICS TO TEAMWORKING

Another of the great teachings that this branch of science has passed on to me is teamwork. Since I was a child, I have seen in competitions such as "Matemáticas al Sprint" (organised by ESTALMAT) or the Team Tests of the Thales National Mathematical Olympiad, how collaborating with other students improves individual work. However, the experience that had the greatest impact on me in terms of cooperation was the Barcelona TrollContest. With four of my friends I faced real headache problems from 10pm until 6am the next day.

One of them, Pablo Martín Santamaría, at the end of a demonstration concluded that "without the help of the others, I wouldn't have solved this problem in less than a week". We all knew each other, and we knew each other's strengths. Therefore, in the process of solving the problem, each of us was able to play a leading role in the phase in which we were best at.

The creator of the competition, Marc Felipe i Alsina, says that "if it were individual, one is more likely to say 'I don't understand anything, I'm going to sleep', but in a group it is easier to climb that first step, because twelve eyes see better than two". Moreover, teamwork helps its members to persist, which is essential given the long hours required to complete this competition. As Marc says, "staying motivated [for anything] in the wee hours of the morning is no easy task, but if you do it for the team, it's harder to give up".

As we can see, in a world in which teamwork is already essential, mathematics teaching is an ideal tool for students to acquire this soft skill that is so in demand in today's business world and in the near future.

## MATHEMATICS WITH AN INTERDISCIPLINARY POTENTIAL

Mathematics has direct application in any scientific or even economic discipline. I am currently part of the World Science Scholars programme, in which different leaders in science teach courses on physics, computational science, neuroscience, astro-seismology, phylogeny, black holes,



causality... All these subjects are closely linked by mathematics, which could be considered the starting point of science. In the words of Bernardo Silva Benítez, engineering student and member of the 2020 Cohort of World Science Scholars, "mathematics is the universal language by law/excellence. It allows us to apply it to absolutely all scientific, social, musical phenomenon... All sorts of events. That is where the desire to explain what is happening around us comes from".

As we can see, mathematical knowledge will be useful in the professional life of many individuals, whatever their university degree. We should never underestimate the potential of this subject, as it guarantees self-sufficiency in the workplace: it is not necessary to have very complex knowledge, but it is essential to know how to handle it.

### MATHEMATICS TO CREATE INTERNATIONAL NETWORKS

Mathematics serves as a bridge to share ideas with people all over the world. This is where the other characteristics mentioned above can come into play. In the recent international projects I have been involved in (WSS and STEAME Students), I have observed first-hand how people build friendships, try to solve problems, seek enrichment by listening to their peers and try to improve the life of society. All of this can be achieved by relying -not exclusively, but significantly- on this subject. A colleague of mine in the World Science Scholars network, Bernardo Rafael Silva Benítez, says that "what is particularly special about the [WSS] programme is the meeting of different people from around the world with different cultures" and stresses the importance of "having shared ideas and experiences related to mathematics; each with their own approach to pure mathematics, physics or biology. This is where some very interesting projects are born".

In general, this science is a way to create networks. Tackling problems as a team and sharing points of view helps to strengthen relationships between people. As Professor Cristina Draper says, "meeting different people is important, just to feel that even though we are similar, people are also exciting. When I was young, I found people much more exciting than mathematics. For me right now, people and mathematics are inseparable, because science is also what makes them, and creates the prodigious history of human beings and their desire to discover the world".

### CONCLUSION

As Bernardo says, "mathematics has a stigma that makes people think it is boring and only for geniuses". However, I believe there are many reasons why we should not question their importance in compulsory education. It is equally relevant that they should be treated in such a way as to get the most out of what this subject can teach us, which is more than just numbers and formulas.

When we think of the ideal school, there are those who think of a revolution in the curricula by implementing more technological subjects; the implementation of digital tools and artificial intelligence; the digitalisation of content by transferring it to platforms; project-based, interdisciplinary learning methods that emphasise teamwork....

I would like it to be absolutely clear from my experience and that of many of my colleagues that mathematics education can meet all our expectations. We just need to reform the way the subject



is taught to fit the educational model of the present and the future. Renewal is not always replacement but can be done by transformation.

In conclusion, this subject should receive special attention from politicians, teachers and students. We must ensure that it is not boring and methodical, but that every pupil can be enriched as much as possible. We should always keep in mind to make the most of everything while thinking what the word mathematics could offer us.



## Artificial Intelligence and How It Will Shape the World

*by Sebastián de la Torre Gil-Delgado*

Not too long ago we saw movies that talked about a future ruled by intelligent robots and laughed at the possibility of something of this significance ever happening, however, as we must have all seen by now, that distant future could not be any closer.

Artificial Intelligence (AI) is rapidly invading our society, from language-trained search engines to self-driving cars, it is all coming together and the repercussions it will have are unimaginable. This impressive tool is the key to most subsequent advancements in technology and it will surely aid in the more tedious tasks humanity still has to face currently like file management and large data processing.

Nevertheless, this is far from all the reach this technology will have, as more work is put into it day by day. Firstly, we have image generating AI, which, given a prompt, can create an image out of nothing in less than a minute. There are many web pages already that allow you to do this, for example, DALL-E, Craiyon, Midjourney... They all follow the same principle, you input a piece of text containing certain characteristics you want your picture to show, and it outputs an array of images with said attributes for you to choose from.



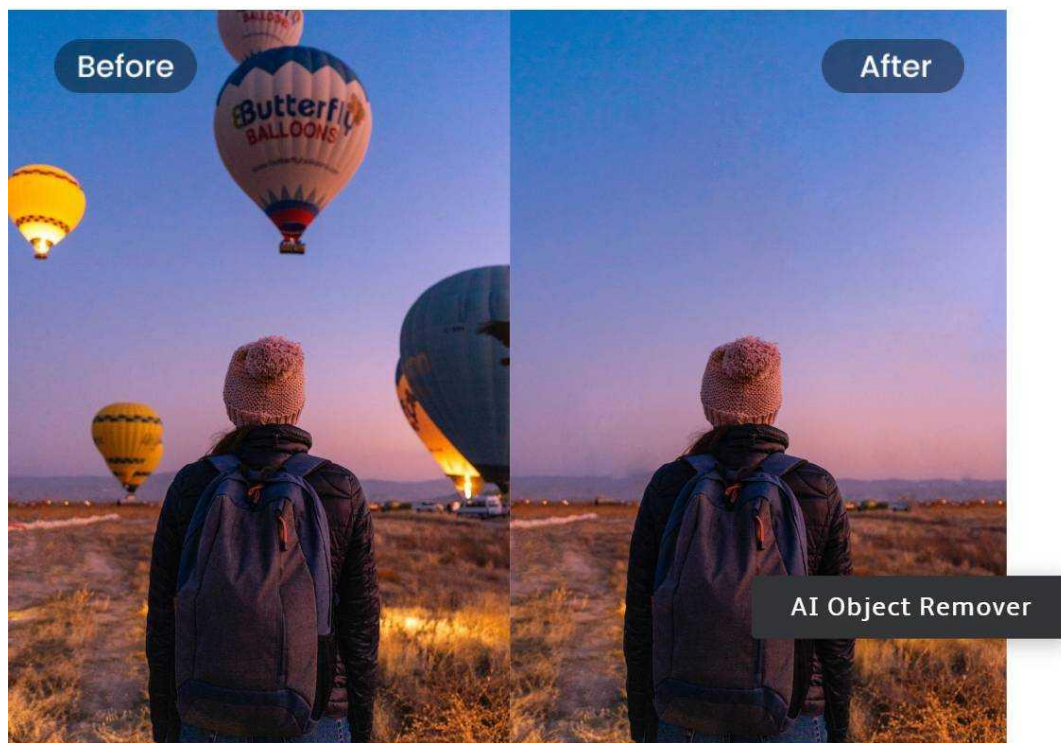
*Example of artwork created by DALL-E*

Another very interesting tool that is now open for the public is ChatGPT, a language-focused AI trained to “understand” text prompts asking for information and answer with relevant data. More

recently, the search engine Bing has implemented this technology for much more personal responses to one’s search on the internet providing both coherent AI-generated paragraphs and sources for the information you were looking for in case you wanted to dive deeper with just a click.

ChatGPT is extremely easy to use and it produces humanlike responses, despite that, it can sometimes give out wrong information, since its basis for the study of the human language was the internet and it could not tell apart real and fake data, so you should always be wary when using this tool and double check everything it tells you.

As stated earlier, different webpages that allow you to create new images are publicly available, however, some websites are also being developed that would enable the user to modify his own images and customize what is shown simply with a text prompt. Instead of spending hours trying to edit an image in Photoshop to, for example, remove someone in the background, you can simply input the image and a short sentence that reads: “delete the man standing on the back of the picture” and, in a matter of seconds, the AI will have completely erased the annoying figure.



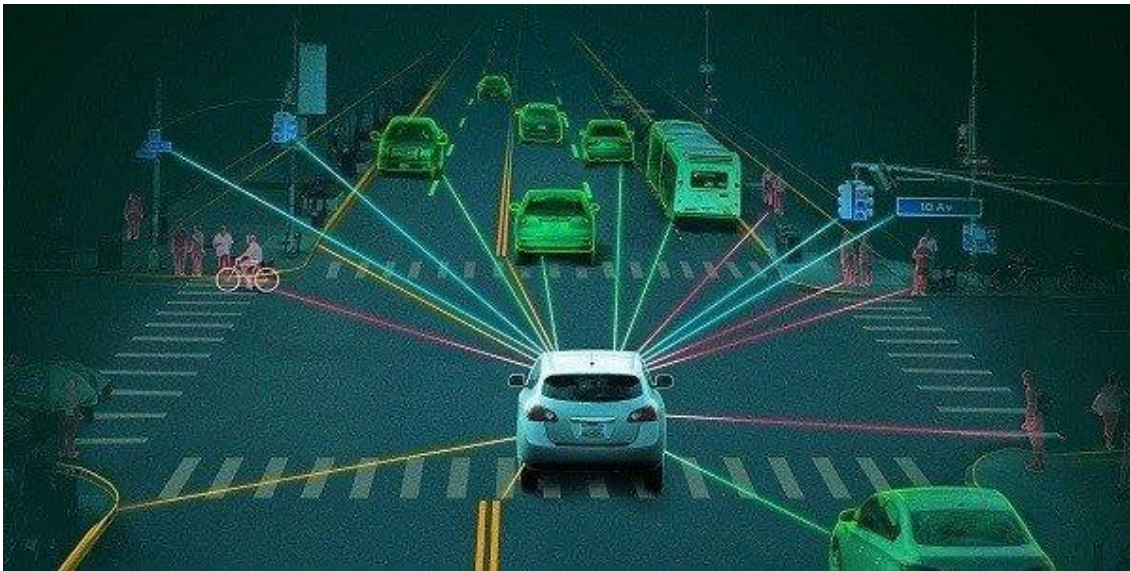
*Example of objects removed from a Photo using AI*

Besides the subject of text and images, we can take a look at the research that is being done in order to replicate the voice of an individual from as little sample speech as possible. Recently, the AI, which would require at least a minute of voice to be able to capture the essence of someone’s

speech in order to reproduce it, has lowered its limit to under five seconds of sample, without sacrificing nearly any quality and generating really convincing results.

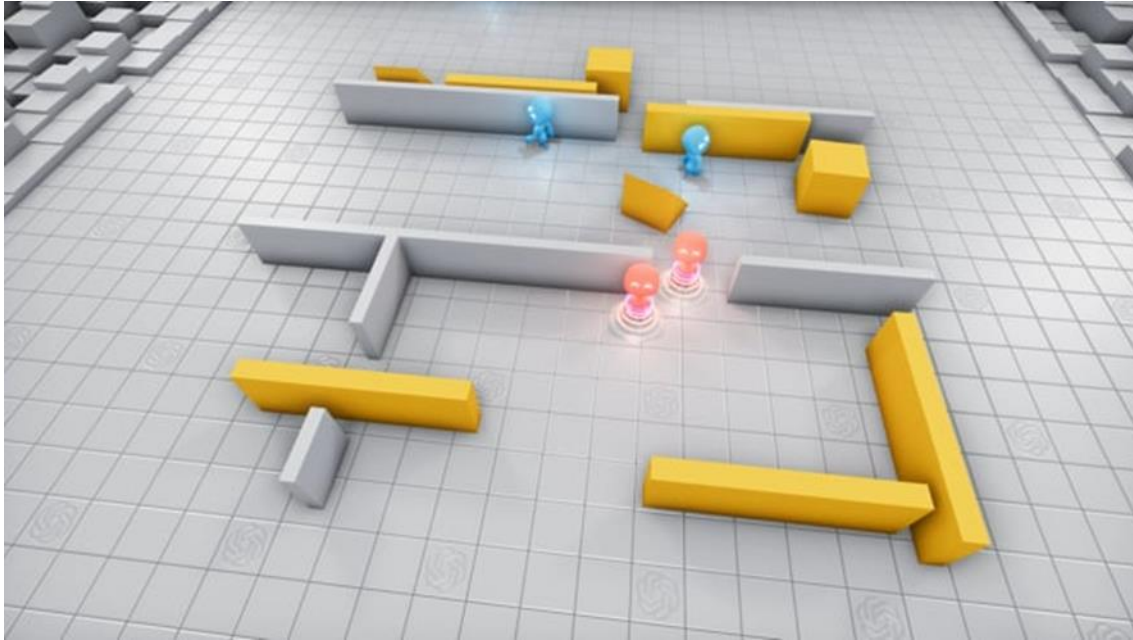
Additional work in this subject area is being put into the creation of pieces of art, whether it is AI-generated music (which is currently undistinguishable from human-generated music due to the enormous advances in this technology) or literature. The latter can be produced by ChatGPT itself, which has studied the different styles of authors from all of history and can more or less replicate their methods and techniques to write text that, while maybe not having a subject that the authors themselves would have chosen, very closely resembles their other genuine works.

As mentioned in the introduction, this technology is also being put to use in self-driving cars, designed to let the driver rest while on a car trip and only have to check the road every once in a while. However, AI technology must be handled with care, since the procedures it follows to decide what to do are seemingly random and so a human must be ensuring that this randomness does not affect neither the safety of the passengers nor the safety of pedestrians and other vehicles. Despite this limitation, the technology has advanced greatly and we will surely see it in the streets in no time.



*Representation of a car checking its surroundings to self-drive*

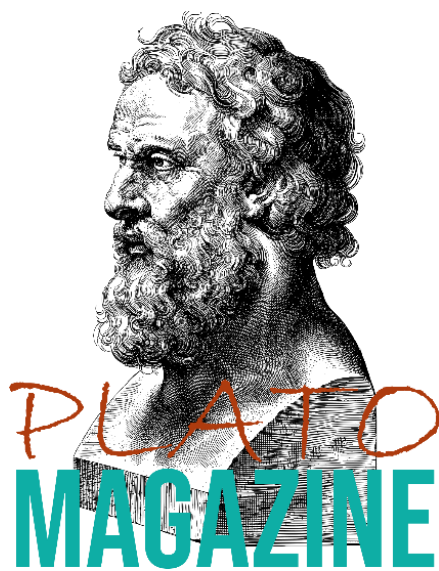
Finally, AI technology is being trained to solve relatively straightforward problems in an enclosed virtual environment starting from scratch and learning to do things like solve puzzles and play simple videogames. The purpose of these developments is more on the technical side of research, as it is mostly done to experiment with its capabilities and see how far it can reach, as well as trying to find new ways in which it could be applied. For example, this kind of AI could be used to test out new games and find bugs and glitches or to inspire new ideas for physics engines for programming, based on the interactions of the characters with their surroundings.



*Example of an AI training on a hide and seek playground*

All in all, the recent advancements made in AI technology will surely be of great significance in the upcoming years and it is undeniable that these tools will make life easier for everyone improving general wellbeing and contributing to the creation of a technology-based society.





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