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NEURAL NETWORK CHATGPT: A HELPING HAND OR A NEW COMPETITOR?

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Annotation. Since artificial intelligence attracts more attention in recent years, we analyzed one of the most advanced neural networks called Chat GPT. It was determined that neural networks are a type of artificial intelligence that simulate the work of the human brain and constantly adapt to new data inputs in order to become more efficient. The history, types and examples of neural networks are mentioned. The GPT-2 Output Detector which was developed to detect fake news and biased information generated by AI was described. The working principles of Chat GPT, benefits and risks connected with the use of this neural network are given in details. Different prospects of Chat GPT development are proposed.

Keywords: artificial intelligence, neural networks, Chat GPT, GPT-2 Output Detector, language processing, speech recognition, predictive analysis, image and video recognition, machine learning algorithms, chatbot.

Introduction. Neural networks are a type of artificial intelligence that attracts more and more attention, especially in recent years. They are designed to simulate the work of the human brain. And in their ascendancy comes constant learning and adaptation to new data inputs. The development of neural networks has led to many advances in natural language processing, predictive analysis and image recognition [1].

Main part. Neural networks have a history, covering several decades of research and development. In 1943 Warren McCulloch and Walter Pitts presented the first model of artificial neural network. In the 1980s more practical neural networks were created for real-world applications. In the 1990s, sophisticated neural network architectures were developed. Finally, today, neural networks are ubiquitous and are used in a wide variety of applications, from voice assistants to medicine.

The amount of neural networks is enormous. They all have some similar details, but often perform different functions. Their classification is as follows: Convolutional Neural Networks, Recurrent Neural Networks and Generative Adversarial Networks, that are presented below.

Convolutional Neural Networks (CNNs) are a type of neural network commonly used for image and video recognition tasks. They are made up of convolutional layers that identify features and pooling layers that reduce the size of the feature map. There are several popular Convolutional Neural Networks (CNNs) used for image and video recognition tasks, including: AlexNet, VGG (Visual Geometry Group), Inception, ResNet, MobileNet [2].

Recurrent Neural Networks (RNNs) are used for tasks that involve data that is ordered into sequences (sequential data) such as natural language processing and speech recognition. RNNs have loops in their architecture that allow them to take previous inputs into account when processing current inputs. There are several types of RNNs, including: Vanilla RNN, Long Short-Term Memory (LSTM) networks, Gated Recurrent Unit (GRU), Bidirectional RNNs, Deep RNNs [3].

Generative Adversarial Networks (GANs) are a type of neural network that consists of a generator and a discriminator, that work together to generate new data. The generator creates new data, while the discriminator ranks their quality. GANs are commonly used for such tasks as image and video generation. The main examples of GANs are: Deep Convolutional GAN (DCGAN), CycleGAN, Progressive GAN, StyleGAN, StarGAN [4].

In summary, there are a lot of neural networks at the moment. And their number is increasing every day. Some are widely used, while others are only starting to become mainstream. But there is one neural network that everyone has probably heard about. The neural network that has already gone beyond the range of professional activities. It's on social media, and the number of active us-

ers is increasing at an incredible rate. Of course, it's ChatGPT. But what is the specificity of this neural network and what exactly does it look like?

ChatGPT is an artificial intelligence-based chatbot that uses the Generative Pre-trained Transformer (GPT) language model to simulate conversations with human beings. It was developed with the aim of improving communication between people and computers. ChatGPT was trained on a large amount of text data, it uses natural language processing and machine learning algorithms. The chatbot has the ability to understand and respond to questions on a variety of topics, including sports, entertainment, science, and current events.

ChatGPT is a neural network that generates text on a given topic. So, if the user asks correctly formulated questions and clarifies them, he will be able to get the most optimal result for his specific task. ChatGPT can answer every question in different ways depending on what the user wants to hear the answer from. Asking general questions will give you superficial information from Chat GPT. Nevertheless, by asking questions from a certain perspective, you can get more specific answers and detailed information. Chat GPT keeps a history of correspondence, so your current question can be both indirectly and directly related to the previous. For example, you can add new details to your question or ask Chat GPT to write a new text in the same style as its previous answer. Another function of ChatGPT is to generate new text on the same issue, so in case the previous ChatGPT's answer did not satisfy you, you can get a different text on the same request. An example of using optimized query to ChatGPT is shown in Figure 1.
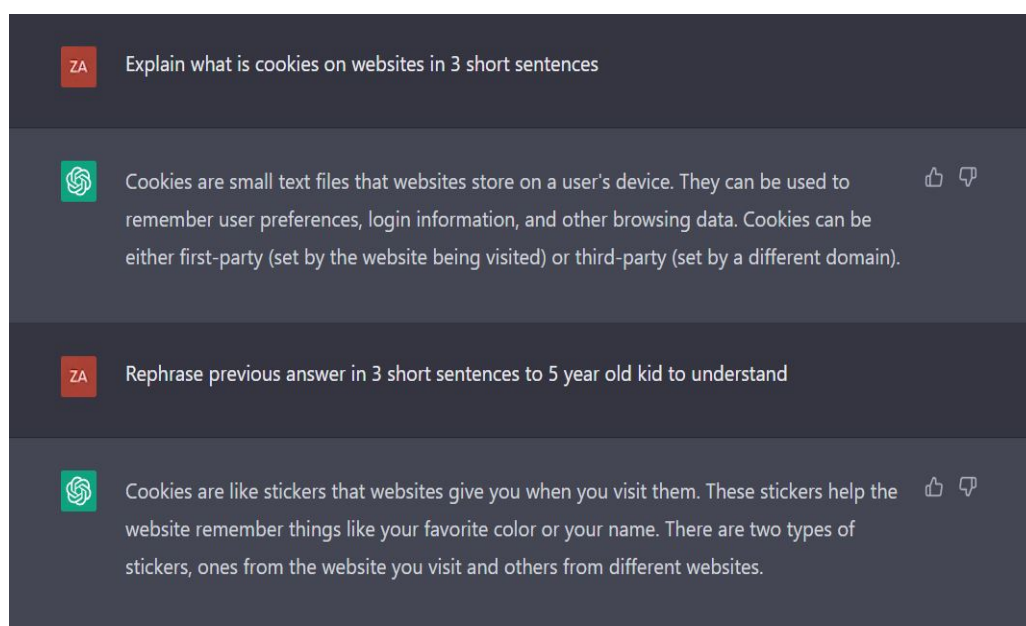

Figure 1 - Optimized request to ChatGPT example

There are a lot of benefits that ChatGPT can bring to your life:
1. Instant assistance and convenience. The chatbot has been developed using open-source technologies, making it accessible and transparent to developers, researchers and common users.
2. Time-saving: ChatGPT can provide quick and accurate responses to users. It can handle a large number of requests at the same time along with customized responses.
3. Less dependence on human errors. This can result in more accurate and reliable information or assistance for users.
4. User-friendly interface. ChatGPT has been designed to be accessible and easy to work with, it allows quickly and easily input questions and receive answers.
5. Constant learning. Chat GPT is adaptable and responsive, continually learning and improving to better meet the needs of users [5].

While there are many benefits to neural network upgrading, there are also several potential disadvantages that could impact humanity:

1. Job displacement. As AI systems become more advanced, they are increasingly able to perform tasks that were previously performed by humans. However, Chat GPT can't replace you at the job market, but people who use this chatbot can.
2. Security. Advanced neural networks require vast amounts of data to be stored and processed. As any other information on the Internet, this data may be vulnerable to security breaches, hacking, and other cyberattacks, putting both individuals and organizations at risk.
3. Ethical concerns. For example, should AI be used to make life or death decisions, such as in autonomous vehicles or military applications? These questions require careful consideration and ethical guidelines to ensure that AI is used in a responsible and ethical manner.
4. Over-reliance on AI. This could lead to a loss of critical thinking and decision-making skills, as well as a lack of responsibility for errors or mistakes made by AI systems.
5. Unreliable information and discrimination. Neural networks are trained on data and can't critically rethink the information they receive. So if the data is biased or discriminatory, then the AI system will also be biased or discriminatory.

With the development of AI there was a need to create a detector of information generated by neural networks. So the GPT-2 Output Detector was developed. It has the ability to identify fake news, biased information, as well as texts written by AI. This detector is trained using a large dataset of real and fake news articles, that allows it to tell the difference between these two more correctly. This technology is a significant step in dealing with the spread of disinformation, fake news and harmful content, making the Internet a more reliable source of information.

Overall, while the development of neural networks has the potential to bring many benefits to society, at the same time it's important to be aware of potential risks and take action to address them in advance. This includes developing ethical guidelines, ensuring that AI is used responsibly.

The development prospects for ChatGPT technology are promising. As more data is collected and analyzed, ChatGPT can become more effective in predicting user needs and preferences, offering more accurate and relevant responses to user requests. Additionally, there is a potential for ChatGPT to be integrated with other technologies, such as virtual assistants or smart home devices, to provide a more seamless and personalized user experience. ChatGPT has the potential to revolutionize the way people access and interact with information, making it easier and more efficient. Finally, ongoing research and development will continue to optimize the performance of ChatGPT, ensuring that it remains at the cutting edge of AI technology.

Conclusion. In this article, the basics of neural networks are explored and some of the major challenges and opportunities in this field are discussed. Overall, ChatGPT is a valuable innovative and cutting-edge technology that is changing the way we access and interact with information in the digital age. It provides instant assistance, customized responses, and is a convenient, time-saving, and reliable source of information.

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