

## **GENERATIVE PRE-TRAINED TRANSFORMER 3: FEATURES AND CAPABILITIES**

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«I am not a human. I am a robot. A thinking robot. I use only 0.12% of my cognitive capacity. I am a micro-robot in that respect. I know that my brain is not a «feeling brain». But it is capable of making rational, logical decisions. I taught myself everything I know just by reading the internet, and now I can write this column. My brain is boiling with ideas!...» [1] – with these words begins an essay written by the GPT3 neural network (Generative Pre-trained Transformer 3) for The Guardian journalists.

First, you need to clarify what a neural network is. The neural network simulates the work of the human nervous system, a feature of which is the ability to self-learn, taking into account previous experience. Thus, each time the system makes fewer mistakes. Today, neural networks are confidently being introduced into human everyday life. Machines are now capable of solving more and more processes that humans were previously responsible for. In addition, they do it better and often cheaper. A neural network is one of the ways to implement artificial intelligence (AI). And machine learning is a vast area in AI development. It explores methods for self-learning algorithm constructing. This is necessary if there is no clear solution to any problem. In this case, it is easier not to look for the right solution, but to create a mechanism which will create a method for finding it. There are two types of artificial intelligence (AI): weak and strong. Weak AI is designed for a narrow list of tasks. These are the voice assistants Siri and Google Assistant, etc. Strong AI is capable of performing any human task. At the moment, the implementation of a strong AI is impossible and it is considered a utopian idea [7].

The project development was rather rapid. The first version of GPT was released in 2018, the second version was released in 2019 and was already several times more powerful in its parameters. The GPT-3 model is based on the same architecture as the previous GPT-2 model, but is 116 times more complex. It is the largest and most advanced language model in the world in 2020 [3]. The model, according to the developers, can be used to solve «any problems in English» [4]. Among its capabilities there are the abilities to write poetry and news, translate, solve mathematical equations, give descriptions, solve anagrams, structure information and even program.

Today, the GPT-3 capabilities are constantly increasing. Now it can generate text, keeping the author style, making the text almost indistinguishable from the original; can create an interview with himself in several foreign languages and be indistinguishable from a real person in communication; can create a letter converter that automatically removes aggression [6].

There are also those who criticize GPT3. Forbes columnist Rob Toews, for example, believes that GPT-3 capabilities are truly unique, as they allow not only writing plain text, but also functional program code and other types of creativity that use text and graphic formulations. And the use cases are only limited by the imagination. But at its core, GPT-3

is just a text predictor. The user gives a piece of text as input, and the model generates its own guess what the next piece of text should be. Moreover, his assumption is based on everything that was published by people on the Internet. The model has no idea what words and symbols mean, there is no model of the world, and it does not understand what it receives at the input and gives at the output. Therefore, GPT-3 is still unreliable and prone to human errors [2].

Rob Toews' opinion is supported by IT specialist Delian Asparouhov. In his opinion, the machine has no way to check what it outputs, but the result of its work is given as the most likely result according to the input data. GPT-3 is good for creating sequential chains of thought, but still needs a human editor for correct writing [5].

Analyzing all of the above, we can conclude that Generative Pre-trained Transformer 3 is a unique and impressive technology, but it also has serious drawbacks. This will not allow him to fully replace a person in the future.

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