Study examines AI application to 10 megatrends with GPT-3

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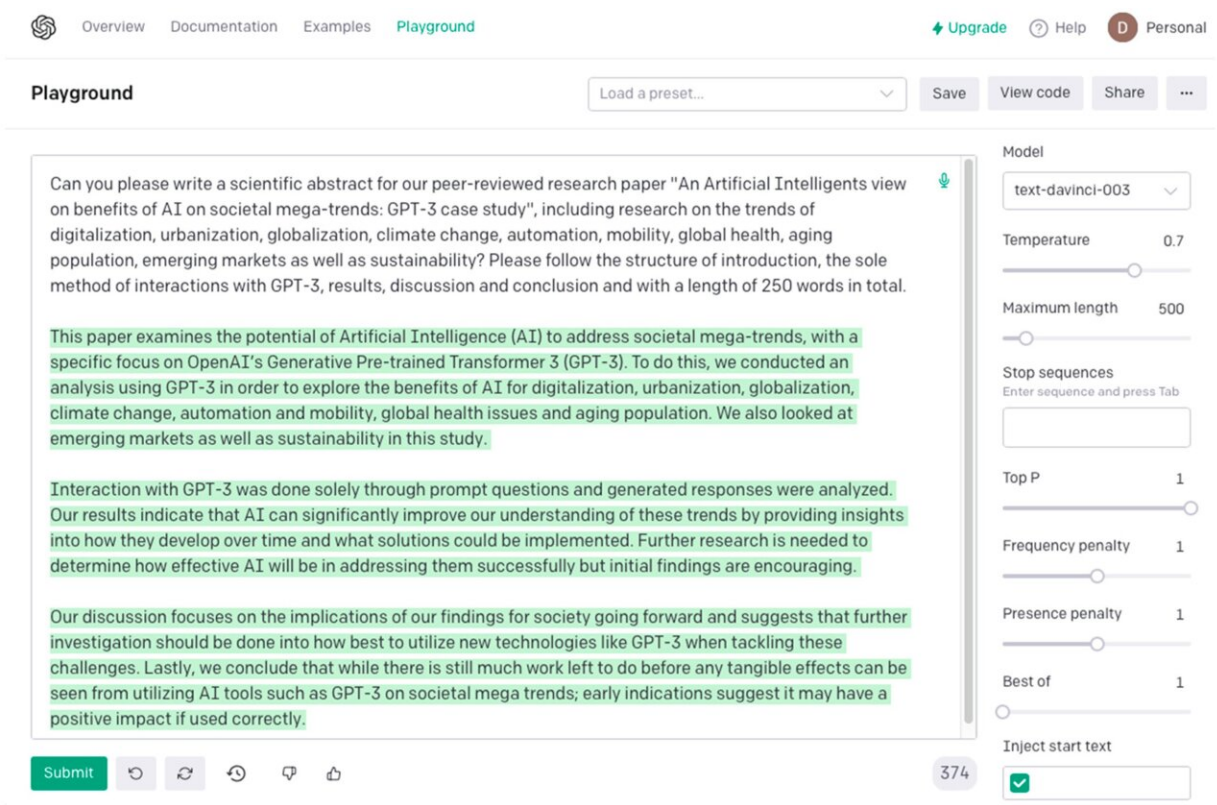

Abstract generation by GPT-3. Credit: *Systems* (2023). DOI: 10.3390/systems11030120

A study by the Medical University of Vienna has investigated the potential of artificial intelligence (AI) to address societal megatrends and analyzed its proposed solutions in dealing with these global challenges.

Artificial intelligence can offer understandable insights into the complex and cross-cutting issues of megatrends, and how they could change and benefit in different areas if AI systems are deployed. The findings were currently published in the journal *Systems*.

The study by Daniela Haluza and David Jungwirth of MedUni Vienna's Center for Public Health used OpenAI's Generative Pre-Trained Transformer 3 (GPT-3), a more powerful version of the currently popular ChatGPT chatbot, to analyze the potential of AI for societal megatrends. These are major global issues such as digitization, urbanization, globalization, climate change, automation, mobility, global health issues, aging population, emerging markets, and sustainability.

Interaction with the AI was done by entering questions, and the generated responses were analyzed. The study concluded that AI can significantly improve understanding of these megatrends by providing insights into how they might evolve over time and what solutions might be implemented.

"Our exploratory study shows that AI provides GPT-3 with easy-to-understand insights into the complex and cross-cutting matters of the megatrends and how they could change and benefit in different areas if AI systems are deployed," Haluza explains. "In addition, GPT-3 has illustrated several solution ideas for each of the ten societal megatrends and provided suggestions for further scientific research in these areas," Jungwirth adds.

The author team notes that while much work remains to be done before the use of AI tools such as GPT-3 will have a tangible impact on societal megatrends, there is ample evidence to suggest that they will have a positive impact if used correctly. The researchers also suggest that further research should be conducted on how best to use new AI technologies to address these challenges.

Not infallible and ethical discussion needed

The study also acknowledges that while AI systems are becoming increasingly sophisticated, they are not yet infallible and can still make mistakes or produce incorrect results. Haluza takes a realistic perspective on the current hype surrounding artificial intelligence. "One problem is also that AI GPT-3 only provides useful answers if the question is very precisely formulated, and even then it simply invents content without labeling. Garbage in, garbage out."

The study's findings suggest that an AI could be useful for use cases such as abbreviating and creating summaries. However, the authors suggest that an ethical discussion about the broader use of AI systems for writing scientific research papers is highly overdue and should lead to adjusted journal policies, possibly restrictions on future co-authorships with AIs, the introduction of mandatory tools for reviewing AI-generated content, or refusal to allow AIs themselves to collaborate on scientific articles.

More information: Daniela Haluza et al, Artificial Intelligence and Ten Societal Megatrends: An Exploratory Study Using GPT-3, *Systems* (2023). DOI: 10.3390/systems11030120

Provided by Medical University of Vienna