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ChatGPT will revolutionise the way researchers work

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in early 2022, only practitioners of artificial intelligence (AI) would have been aware of what a generative pre-trained transformer (GPT) could do. - File pic, for illustration purposes

IN early 2022, only practitioners of artificial intelligence (AI) would have been aware of what a generative pre-trained transformer (GPT) could do.

In layman's terms, GPT is a computer program that creates written text by understanding how people normally use language.

The ancestral GPT that generates text using pre-trained algorithms based on natural language processing was born in the late 1960s.

This changed when ChatGPT was launched to the public on Nov 30, 2022, by OpenAI. It garnered more than one million users in five days and spiked to 100 million users in two months.

In comparison, TikTok took nine months to reach 100 million active users.

The evolution of GPT has come a long way with ChatGPT being a leap in AI development, which is based on the third-generation language prediction model (GPT-3).

The great capability of this advanced chatbot to understand textual information and answer questions using human language has taken the world by storm.

Everyone who has experienced ChatGPT would marvel at its fluent and extensive text responses to prompts and questions, from essays, cooking recipes, step-by-step instructions, business plans and research proposals to programming scripts.

However, there is room for improvement.

For now, ChatGPT is limited by the lack of real-time information and fact-checking capabilities.

Since it is based on a probabilistic language model with predefined grammatical rules and vocabulary, the responses you get might not be factual and there is no reference to sources for verification.

This is made clear in disclaimers in ChatGPT's homepage and responses.

Despite that, these limitations will soon become a thing of the past with ChatGPT evolving and more tech giants developing better versions of GPT based on improved algorithms and databases with real-time search and reference capabilities.

Much has been discussed about ChatGPT's impact on education and jobs.

More buzz will come from new models of visual GPT to generate pictures or videos from text descriptions, which will revolutionise the creative industry with on-demand content creation, such as the launch of GPT-4.

In the research field, the first controversy arose when the first peer-reviewed scientific journal article was published with a co-authorship of ChatGPT.

However, the journal's editor-in-chief has since revised the decision.

The consensus is that most journals ban ChatGPT or other AI models as co-author because AI cannot take ethical and legal responsibilities for the publication.

Nonetheless, this did not stop ChaptGPT from being listed as an author or co-author of more than 200 books on Amazon.

This has implications not just in academia, but also in art and journalism. This is to avoid plagiarism, junk and misinformation.

Education was taken by surprise with students using ChatGPT to write essays and complete assignments. Elon Musk tweeted that ChatGPT could make homework useless.

Locally, the first guide on the usage of ChatGPT in teaching and learning was published by Universiti Putra Malaysia.

It allows students to use the technology responsibly and critically evaluate the information generated by ChatGPT.

Meanwhile, educators are advised to redesign their assessment of students' understanding by creating questions on contextual real-world problems with an emphasis on personal opinion with reasoning on current issues.

Sketches or illustrations using figures can be used in place of essays.

This guide is in line with Unesco's mandate of a human-centred approach to AI for digital learning and the transformation of education.

It can serve as a reference for other educational institutions to draft their own guidelines On the other hand, AI has been revolutionary to scientific research, such as the ground-breaking AlphaFold2 in 2021 on the accuracy in silico modelling of protein structures from sequences.

Now the reverse is also possible with the software generating sequence output from a desired three-dimensional structure.

This will be useful for designing therapeutic peptides to cure diseases.

Furthermore, the BioPharma GPT is also impacting drug discovery through computational chemistry.

ChatGPT provides a cost-effective and efficient way to process huge datasets in generating knowledge to help researchers make decisions during the drug discovery process.

Another newcomer, BioGPT, which was trained with credible biomedical research literature, will be useful for researchers to extract information from a tsunami of data.

It has achieved better-than-human performance based on professional benchmarking on answering questions from the biomedical literature.

One can envision how this GPT can revolutionise biomedical research and provide confident diagnostics for the healthcare industry.

Based on the spirit of the Malaysia National AI Roadmap 2021-2025, people should embrace AI for future developments in becoming an AI-leading country while adhering to the principles of responsible AI.

In summary, it is important for Malaysian researchers to understand AI and its applications to research, development and innovation to help the country become a high-income developed country based on a knowledge economy by 2030.

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