

Artificial, applied and human intelligence

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COMMENT



I was recently asked if I had used ChatGPT to help generate an article. I definitely had not, and was rather insulted that the question had been asked. But it triggered the need to find out more, most notably about how fast I was likely to be made redundant by machine-generated magazine content.

A Google search tells me that ChatGPT – developed by OpenAI, another company involving Elon Musk – is “an AI chatbot that uses natural language processing to create humanlike conversational dialogue. The language model can respond to questions and compose various written content, including articles, social media posts, essays, code and emails”. Impressive and worrying for my future work prospects!

But then I read that it is “similar to the automated chat services found on customer service websites, as people can ask it questions or request clarification to ChatGPT’s replies.” I don’t know anyone who doesn’t intensely dislike automated customer service calls.

GPT is an acronym that stands for generative pre-trained transformer, implying that the system is ‘trained’ in advance to improve the responses it gives. This is done through human feedback that ranks the best responses. The system is described as using state-of-the-art natural language processing (NLP) and a neural network to generate responses to input questions without the need to be explicitly told what the answers are or where to look for them.

According to an article in the Databricks website (www.databricks.com): “We are in the golden age of data and AI. The unparalleled pace of AI discoveries, model improvements and new products on the market puts data and AI strategy at the top of conversations across every organisation around the world. The next generation of winning companies and executives will be those who understand and leverage AI.”

Apart from the impressive GPT chatbot, AI is the technology underpinning the automation of image and speech recognition; self-driving cars; medical symptom and image analysis; security surveillance for unusual behaviour; fraudulent financial transactions; market trends and power grid control and stabilisation.

It is said to be a dominant new technology with the potential to automate, maximise efficiency and transform many industries. On the down side, though, it comes with risks, including misinformation, fake news and deepfakes; privacy breaches; bias and discrimination. With respect to jobs, AI is predicted to make some 85-million jobs obsolete between 2020 and 2025, but it is also expected to

create 97-million new jobs.

The biggest threat, however, is being called ‘singularity’, which is the point at which AI surpasses human intelligence and ceases to be under human control, which some believe could occur within the next decade.

In an interview with BBE’s Richard Gundersen published in this issue, he says: “We see VUMA as a programme with AI capabilities, which I prefer to call ‘applied intelligence’, because the intelligence is not artificial. VUMA was created using our experience of real ventilation systems. The software incorporates our engineering intelligence with respect to heat flow for mine cooling requirements and how that can be best managed,” he explains.

Two things struck me immediately. First, AI is not new. As a student some 40 years ago, some of my colleagues were working on expert systems. I guess these might have been of the ‘rule-based’ type, but the point of them was very similar to the descriptions we have for AI today. “Expert systems are computer programs that simulate human expert thought processes to solve complex decision problems in a specific domain.” And if the use of ‘artificial’ neural networks is a defining feature of artificial intelligence, modern-day expert systems also do, so they are not very different.

Also, though, using the word ‘applied’ instead of ‘artificial’ reinforces the importance and limitations of human input into AI systems. All machines are created by humans, no-matter how ‘intelligent.’ Some may argue that this may not always be true, but the huge amounts of data being collected and used in these systems is generally generated from human activity and/or creativity.

And we know that human activity and creativity is not all good. Many of the potential ‘fears’ we associate with AI are human driven: misinformation is used to manipulate who we vote for; people use fake news to divide us and deliberately cause unrest; and in so many ways, our preferences and lifestyles are being manipulated into making other people rich.

When used to advance our collective knowledge; to use our resources more efficiently; to lower impacts on the environment, to reduce poverty and to genuinely improve the quality of life, AI is likely to be overwhelmingly positive.

But because there are intelligent humans who see only winning, power, profit and their own insatiable needs, AI is certain to need effective and thorough regulation.

And as for my own fears about ChatGPT, there are already a huge number of human writers far better than I will ever be.



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