

The Fear Of AI Is Overblown—And Here's Why



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The unprecedented popularity of ChatGPT has turbocharged the AI hype machine. We are being bombarded daily by news articles announcing humankind's greatest invention—Artificial Intelligence (AI).

AI is “qualitatively different,” “transformational,” “revolutionary,” “will change everything,”—they say. OpenAI, the company behind ChatGPT, announced a major upgrade of the technology behind ChatGPT called GPT4.

Already, [Microsoft researchers](#) are claiming that GPT4 shows “sparks of Artificial General Intelligence” or human-like intelligence - the Holy grail of AI research. Fantastic claims are made about reaching the point of “[AI Singularity](#)” of machines equalling and then surpassing human intelligence.

The [business press talks](#) about hundreds of millions of job losses as AI would replace humans in a whole host of professions. Others worry about a sci-fi-like near future where super-intelligent AI goes rogue and destroys or enslaves humankind. Are these predictions grounded in reality, or is this just over-the-board hype that the Tech industry and the VC hype machine are so good at selling?

The current breed of AI Models are based on things called “Neural Networks.” While the term “neural” conjures up images of an artificial brain simulated using computer chips, the reality of AI is that neural networks are nothing like how the

human brain actually works. These so-called neural networks have no similarity with the network of neurons in the brain. This terminology was, however, a major reason for the artificial “neural networks” to become popular and widely adopted despite its serious limitations and flaws.

“Machine Learning” algorithms currently used are an extension of [statistical methods](#) that lack theoretical justification for extending them this way. Traditional statistical methods have the virtue of simplicity. It is easy to understand what they do, when and why they work. They come with mathematical assurances that the results of their analysis are meaningful, assuming very specific conditions. Since the real world is complicated, those conditions never hold, and as a result, statistical predictions are seldom accurate. Economists, epidemiologists and statisticians acknowledge this and then use intuition to apply statistics to get approximate guidance for specific purposes in specific contexts. These caveats are often overlooked, leading to the misuse of traditional statistical methods with sometimes catastrophic consequences, as in the 2008 Great Financial Crisis or the LTCM blowup in 1998, which almost brought down the global financial system. Remember Mark Twain’s famous quote, “Lies, damned lies and Statistics.”

Machine learning relies on the complete abandonment of the caution which should be associated with the judicious use of statistical methods. The real world is messy and chaotic and hence impossible to model using traditional statistical methods. So the answer from the world of AI is to drop any pretense at theoretical justification on why and how these AI models, which are many orders of magnitude more complicated than traditional statistical methods, should work. Freedom from these principled constraints makes the AI Model “more powerful.” They are effectively elaborate and complicated curve-fitting exercises which empirically fit observed data without us understanding the underlying relationships.

But it’s also true that these AI Models can sometimes do things that no other technology can do at all. Some outputs are astonishing, such as the passages ChatGPT can generate or the images that DALL-E can create. This is fantastic at wowing people and creating hype. The reason they work “so well” is the mind-boggling quantities of training data—enough to cover almost all text and images created by humans. Even with this scale of training data and billions of parameters, the AI Models don’t work spontaneously but require kludgy ad-hoc

workarounds to produce desirable results.

Even with all the hacks, the models often develop spurious correlations, i.e., they work for the wrong reasons. For example, it has been reported that many vision models work by exploiting correlations pertaining to image texture, background, angle of the photograph and specific features. These vision AI Models then give bad results in uncontrolled situations. For example, a leopard print sofa would be identified as a leopard; the models don't work when a tiny amount of fixed pattern noise undetectable by humans is added to the images or the images are rotated, say in the case of a post-accident upside down car. ChatGPT, for all its impressive prose, poetry and essays, is unable to do simple multiplication of two large numbers, which a calculator from the 1970s can do easily.

The AI Models do not have any level of human-like understanding but are great at mimicry and fooling people into believing they are intelligent by parroting the vast trove of text they have ingested. For this reason, computational linguist Emily Bender called the Large Language Models such as ChatGPT and Google's BART and BERT "Stochastic Parrots" in a [2021 paper](#). Her Google co-authors—Timnit Gebru and Margaret Mitchell—were asked to take their names off the paper. When they refused, they were fired by Google.

This criticism is not just directed at the current large language models but at the entire paradigm of trying to develop artificial intelligence. We don't get good at things just by reading about them, that comes from practice, of seeing what works and what doesn't. This is true even for purely intellectual tasks such as reading and writing. Even for formal disciplines such as Maths, one can't get good at Maths without practicing it. These AI Models have no purpose of their own. They, therefore, can't understand meaning or produce meaningful text or images. Many AI critics have argued that real intelligence requires social "*situatedness*."

Doing physical things in the real world requires dealing with complexity, non-linearly and chaos. It also involves *practice in actually doing those things*. It is for this reason that progress has been exceedingly slow in Robotics: current Robots can only handle fixed repetitive tasks involving identical rigid objects, such as in an assembly line. Even after years of hype about driverless cars and vast amounts of funding for its research, fully automated driving still doesn't appear feasible in the near future.

Current AI development based on detecting statistical correlations using “neural networks,” which are treated as black-boxes, promotes a pseudoscience-based myth of creating intelligence at the cost of developing a scientific understanding of how and why these networks work. Instead, they emphasize spectacles such as creating impressive demos and scoring in standardized tests based on memorized data.

The only significant commercial use cases of the current versions of AI are advertisements: targeting buyers for social media and video streaming platforms. This does not require the high degree of reliability demanded from other engineering solutions; they just need to be “good enough.” And bad outputs, such as the propagation of fake news and the creation of hate-filled filter bubbles, largely go unpunished.

Perhaps a silver lining in all this is, given the bleak prospects of AI singularity, the fear of super-intelligent malicious AIs destroying humankind is overblown. However, that is of little comfort for those at the receiving end of “AI decision systems.” We already have numerous examples of AI decision systems the world over denying people legitimate insurance claims, medical and hospitalization benefits and state welfare benefits. AI systems in the United States have been implicated in imprisoning minorities to longer prison terms. There have even been reports of withdrawal of parental rights to minority parents based on spurious statistical correlations, which often boil down to them not having enough money to properly feed and take care of their children. And, of course, on fostering hate speech on social media. As noted linguist Noam Chomsky wrote in a [recent article](#), “ChatGPT exhibits something like the banality of evil: plagiarism and apathy and obviation.”

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Source: Globetrotter

Credit Line: This article was produced by [Globetrotter](#)