Assignment 10
Due: Nov 29
To be done by all students, regardless of major

For our short last assignment we will be looking at what is probably today's most discussed issue around the topic of technology's potential impact on society – the possibility of Generative AI developing into a malign super-intelligence. This is a highly debated point, with many active researchers and businesspeople in the field warning of an impending apocalypse unless governments intervene to constrain the systems in some (never really specified) way.

In this assignment, we will look at the other perspective. You are to read and summarize the main arguments contained this article:
https://www.eidosmedia.com/updater/technology/Is-Generative-AI-a-Dead-End

This is to be a more in-depth analysis of the assigned reading than previous assignments. I expect you to produce at least 3/4s of a page detailing the main arguments made around this technology and its future. You are then to provide at least ¼ page stating your views on the matter (there is no right or wrong answer, but you are expected to provide a thoughtful argument to support your views). If you refer to arguments made in other articles about this subject then you are expected to cite them and provide a clickable link to the source.

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The introduction of ChatGPT over a year ago created a crucial turning point for generative AI, leading to both excitement and concern. Since that time, generative AI models have been incorporated into a variety of applications, including internet search and customer support, significantly influencing industries such as news media and financial services. These models improve productivity by performing tasks such as title generation, and language refinement, serving to complement rather than replace human expertise.

A growing discussion revolves around whether generative AI signifies progress toward Artificial General Intelligence, a system that could exceed human capabilities in intellectual adaptability. Individuals, including researchers from Microsoft and Google, contend that current models exhibit the essential characteristics of Artificial General Intelligence, pointing to their ability to perform diverse tasks, including passing professional examinations. Conversely, skeptics like Yann LeCun from Meta argue that language models represent an evolutionary dead end in the pursuit of Artificial General Intelligence, as their underlying architecture fundamentally lacks the potential for genuine general intelligence.

Critics emphasize particular shortcomings of generative AI, such as its deficiency in world knowledge, logical reasoning, and mathematical precision. Trained on statistical patterns derived from existing language, these models frequently generate responses that may be inaccurate, hallucinate facts, and struggle in rule-based domains like chess or mathematics. This limitation is attributed to their dependence on probabilistic associations rather than fixed rules, which some believe constrains their overall capabilities.

However given these challenges, generative AI continues to provide tangible advantages. By automating repetitive tasks, it enables professionals in content-oriented sectors to concentrate on more creative and strategic endeavors. While the discussion regarding the feasibility of Artificial General Intelligence continues, the initial benefits of these models in enhancing productivity are definite. Future advancements may seek to bridge the gaps in generative AI, moving closer to the attainment of human-level intelligence.

In my opinion, I don’t think we will see generative AI evolve into an all knowing super intelligence that could take over the world anytime soon. I largely believe this to be the case due to generative AI’s complete inability to perform mathematics. Additionally, since generative AI can only be trained on preexisting data, it can therefore only create new ideas that mimic these old ideas. As a result, it’s apparent that generative AI is not entirely capable of creating its own original thought. It's possible that far in the future as mathematics evolves that we could see vast improvements in generative AI, however I believe it will never lead to AI becoming a super intelligence. Overall, generative AI is a human creation and as a result it will likely never surpass the ability to do things outside the realm of what we encode it to do.