In your readings this week, you have spent some time exploring different emerging trends in artificial intelligence. In this discussion, you will be asked to evaluate research on an emerging trend of your choice and discuss your findings with your classmates. Before writing your initial post, select a milestone release, research paper, or publication from OpenAI or DeepMind, or a comparable research paper from the Shapiro Library.

For your initial post, write a response of 2–4 paragraphs total. Be sure to answer *each* of the following prompts. Your answer must include a reference to the paper you selected, as well as any other resources used, properly cited in APA format.

* Provide a brief (one paragraph or less) summary of the paper you read. What emerging trend was covered? How is it related to other topics discussed in this course?
* Evaluate the emerging trend. What are the potential benefits of this emerging trend? What types of problems is it designed to solve? What are its limitations? What are its ethical and societal implications?

In your responses to your peers, critically evaluate your classmates' posts. Did they adequately discuss their trends' potential benefits, limitations, and ethical/societal implications? Remember to respond to at least two of your peers. Be sure to include cited sources to support your points.

I enjoyed reading two articles in the selection; “How AlphaChip transformed computer chip design” & “Discovering novel algorithms with AlphaTensor. I’m going with the latter due to the some of the mention on tensor chips coming in newer Graphic Processing Unit (GPU) for home pc enthusiast & it was a more familiar term. Even though every new generation is building upon the previous generation of GPUs, having many more features incorporated within them (RTX 5000 series multi frame generation & DLSS), it always stems from fundamental computational tasks, in particular matrix multiplication. Tensor cores are essential for deep learning & high-performance computing. As Alpha Tensor enhances efficiency with tensor core utilization, it can lead to faster & more energy efficient computations.

Emerging trends highlight the use of A.I. use in optimizing algorithms for improvements in computational speed & reduced energy consummation. Those improvements are crucial when it comes to training large neural networks & scientific simulations. Yet limitations exist with this method, like the ability to implement or interpret, & substantial computational resources that are required to train AlphaTensor. Also, as each tensor core is specialized, these optimizations & methods may not translate to other hardware.

Lastly, we always have to consider the moral ethics behind these actions. While tensor core training can allow access to high-performance computing, these concentrations of such advanced A.I. systems may exacerbate these issues. Furthermore, the ownership of AI-discovered algorithms and their integration into proprietary hardware like GPUs could create intellectual property challenges. Overall, while AI-driven optimization of tensor cores holds great promise, it also necessitates careful consideration of its broader societal and ethical implications.

Fawzi, A. (2022, October 5). *Discovering novel algorithms with Alphatensor*. Google DeepMind. https://deepmind.google/discover/blog/discovering-novel-algorithms-with-alphatensor/

Good evening Ralfy. How’s the weather treating you? I needed an excuse for a day off from work with these freezing temperatures.

Good points highlighting how A.I. works in healthcare to make it more effective. I think if we look further into the ethical implications. Going back to an earlier discussion, we have still always have to think about the system’s adaptability, which make it less effective for new users. On the ethical side, the safeguards needed to protect HIPAA, social interactions, or implications related to overreliance to users’ mental health. As we move further into 2025 & beyond, these advancements will need to be weighed more heavily.

Evening Garrett, been a challenging week.

A.I. & robotics advancements come with their own ethical risks, especially with  the potential for weaponization. While A.I. powered robots playing soccer should be a fun & simple thing, it could also be used for military weapons or surveillance. Autonomous robots in combat could lead to unintended consequences or loss of human control. This dual-use nature of AI highlights the need for ethical discussions and regulations to ensure responsible development.

Deep reinforcement learning (DRL) also has limitations, particularly in training and real-world use. It does require computing power & time of varying degrees, making this very costly & less accessible to small organizations. A DRL-trained robot may struggle with unexpected human interactions or fail to handle edge cases, leading to frustrating or harmful outcomes. These challenges highlight the need for thorough testing and safeguards before deployment.