Discussion 4: Knowledge Representation

Discussion Topic:

As AI evolves, our ability to predict results changes based on the different applications of the technology.
What fields could benefit the most from implementing new AI techniques?
Are there any fields you would like to see AI less involved in? Explain why.

My Post:

Hello Class,

Soon, Artificial Intelligence (AI) will have an impact on every aspect of our lives, from the way we drive to the way we work, learn, interact, shop, and manage our health. I believe that, depending on how we implement and use AI, it can be beneficial to all sectors of society.

The fields of healthcare, finance, and manufacturing are leaders in AI adoption and probably will likely be the first to benefit most from new AI techniques due to their early adoption of AI. However, before long, scientific research, more specifically AI research, will benefit the most from the implementation of new AI techniques. Research done by Lu et al. (2024) shows that autonomous systems like "The AI Scientist" are possible. That is a fully automated system capable of conducting scientific research and making scientific discoveries. The research showed that the system can autonomously perform every aspect of a research cycle, from formulating ideas and hypotheses to peer review, developing its research "in an open-ended loop" and only costing $15 per research paper. This will allow AI to recursively improve itself at a very low cost. Imagine a world where, instead of 1,000 smart human AI researchers conducting research, there are 10,000 or even millions of extremely smart 'AI' AI researchers working in tandem at lightning speed, 24 hours a day, and 365 days a year, recursively improving themselves for pennies on the dollar. Thus, the field that will benefit the most from new AI techniques is AI.

Anyhow, as a fan of Start Trek, a field that would like AI to be implemented more extensively in space exploration. While some implementation of AI already exists in the field, they are typically indirect and not exclusively dedicated to advancing space exploration. I believe that space exploration needs its own exclusively dedicated AI implementation, especially now that AI is becoming more capable of autonomous decision-making and is an expert in data analysis.

Live long and prosper 🖖
-Alex

Here is the [AI-Scientist GitHub](#) from Sakana AI Japan, if you are interested.

Related Links:
[Sakana AI](#)
[The AI Scientist: Towards Fully Automated Open-Ended Scientific Discovery](#)

References:

Lu, C., Lu, C., Lange, R. T., Foerster, J., Clune, J., & Ha, D. (2024, August 12). *The AI scientist: Towards fully automated open-ended scientific discovery*. arXiv.org. https://arxiv.org/abs/2408.06292