12-12-2022

Are we making Google stupid?

Hani Safadi
University of Georgia, hanisaf@uga.edu

TREO
Technology, Research, Education, Opinion

Are we making Google stupid?

Hani Safadi hanisaf@uga.edu

In 2008, Nicholas Carr wrote an article titled "ls Google making us stupid?" proposing that the use of technology is contributing to deskilling professionals and knowledge workers (Carr, 2008). This research project investigates the opposite phenomenon; the reliance on such smart tools will eventually contribute to downgrading their performance. We investigate this question through the theoretical lens of automation versus augmentation (Brynjolfsson, 2022).

Specifically, the performance of machine learning models depends on the quality of the underlying training data sets. Yet, the creation of these tools is going to ultimately substitute for the human need to continuously create and grow data sets used for training these models. For example, recent image generation tools like DALLE were trained on massive data from pictures and drawings on the Internet (Ramesh et al., 2022). Less than a year after its introduction, image generation is already providing impressive results. In a recent state fair competition, an AI-generated image won first place! One artist claimed that this is the death of the profession.[1] Yet, if artists stop creating art, then these tools can no longer evolve and improve by leveraging new data.

The previous argument supports the logic of automation; smart technology ultimately negates the need for skilled human workers. In contrast to automation, the logic of augmentation proposes that the use of these smart technology will allow people to be creative in novel and different ways. Artists will leverage image generation tools to draw more imaginative pictures. . All such new content will be used to further improve these tools.

This debate is multi-faceted with a normative view that automation may be more efficient economically, at least in the short term, while augmentation is preferable in the long term with better social outcomes as well. The goal of this study is to test the limit of the automation/augmentation debate in the context of enterprise information systems. Specifically, we plan to design an agent-based model of knowledge worker teams. Actors in these teams can be humans but also AI agents that learn from human decision-making. We plan to explore the dynamics of these teams through the lens of procedural (human) versus substantive rationality (AI) (Simon, 1996) and reinforcement learning (Johanson et al., 2022).

References

Brynjolfsson, E. (2022). *The Turing Trap: The Promise & Peril of Human-Like Artificial Intelligence*. 272–287. http://arxiv.org/abs/2201.04200

Carr, N. (2008). ls Google making us stupid? *Atlantic Monthly*, *302*, 1.

Johanson, M. B., Hughes, E., Timbers, F., & Leibo, J. Z. (2022). *Emergent Bartering Behaviour in Multi-Agent Reinforcement Learning*. http://arxiv.org/abs/2205.06760

Ramesh, A., Dhariwal, P., Nichol, A., Chu, C., & Chen, M. (2022). Hierarchical text-conditional image generation with clip latents. *ArXiv Preprint ArXiv:2204.06125*.

Simon, H. A. (1996). The Sciences of the Artificial. In *MIT Press*. https://doi.org/10.1016/S0898-1221(97)82941-0

[1] https://www.nytimes.com/2022/09/02/technology/ai-artificial-intelligence-artists.html