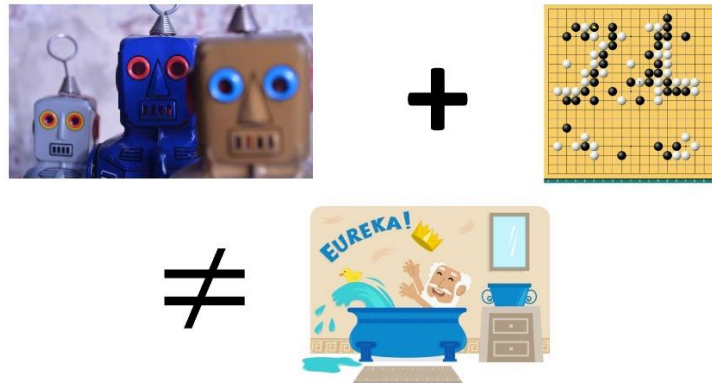


Chatbots Cannot Be “Fixed”

Terry Bollinger
2024-07-30.14:00 EDT Tue



Combining machine intelligence strategies cannot transform sentence completion into something it is not.

While it's good that Google recognizes chatbot deficiencies, they are fooling themselves if they think adding more machine intelligence strategies is enough to transform sentence-prediction chatbots into human-like insight machines.

Wired Magazine: “Several years before ChatGPT began jibber-jabbering away, Google developed a very different ... artificial intelligence program called AlphaGo [and] have now [combined] ... the AI behind today's chatbots with ... a successor to AlphaGo ...” [1]

It's nice that Google has acknowledged the inadequacies of ChatGPT or “generative AI” enough to search actively for ways to avoid jibber-jabbering nonsense instead of retrieving well-verified facts. It would be even better if Google went back to its original core strength of retrieving relevant facts from around the world instead of plugging low-to-terrible related ads and using generative AI to pretend they “own” facts scooped up from the sites they used to return as answers, but everyone has their business strategy.

Despite all the hype, all forms of generative AI boil down to completing a sentence based on how many people have completed similar sentences in the past. You have to add a bit of randomness to keep them from answering always and only with the blandest and most likely completion. For example, if you ask an LLM to complete the sentence “I like my pet [?],” it usually returns “dog,” but sometimes “cat.” If the designers feel wild and giddy and crank up the randomization, you might get “wallaby” occasionally or even “tardigrade.”

Unless you call random noise “generative,” generative AI generates nothing. It retrieves the blandest possible average of human words spoken in the past, with no more comprehension of what those words mean than a dictionary opened to a random page.

The lack of comprehension and use of randomization means you can never fully trust chatbot answers for even the blandest, most obvious questions imaginable. Such inherent uncertainty sharply contrasts when traditional Google gives you the best available pages without randomizing the facts. The randomization doesn't just prevent bland answers and provides just enough scrambling of the sources that Google can claim its AI “learned” the contents of



those pages, supposedly like a human, and thus is not subject to legal liability for plagiarism. The simpler truth is that adding noise to cover sources is not learning at all but a deceptive and inherently untrustworthy form of plagiarism. This lack of human-like learning shows up most vividly when you give chatbots combinations of nouns and verbs that do not resemble anything they encountered during training. Answer quality rapidly declines as you reach these limits of statistical sentence training.

The AlphaGo/AlphaZero approach of simulating and exploring an extremely large space of simulated problems is powerful as long as you have enormous computational resources and a reasonably bound simulation space. However, since physical reality is never a reasonably bound simulation space, this method only learns what you put into your assumptions about how the physical world. The AlphaGo/AlphaZero exhaustive exploration approach thus cannot fix the fundamental problem with LLM tech: LLM is dumber than a stump but talks fluently with a nice sentence structure. You must also overlook the point that all versions of LLM steal other people's ideas, sometimes with permission but more often not, and can easily go full-tilt psychotic if you ask them questions completely unlike any they've seen before.

LLM and sim-space exhaustion, in isolation or combination, are too limited to recreate human problem insight anywhere except in incandescently glowing marketing briefs. We need more and more fundamental research into bio-inspired cognition and the mind-boggling energy efficiency of the predominantly non-digital intelligence of vertebrates.

On LinkedIn: https://www.linkedin.com/posts/terry-bollinger-8a976_while-its-good-that-google-recognizes-chatbot-activity-7224102968021716992-wCJ7

On Medium: <https://medium.com/@terrybollinger/chatbots-cannot-be-fixed-0c6580c3913c>

References

- [1] W. Knight, *Google DeepMind's Game-Playing AI Tackles a Chatbot Blind Spot*, Wired Business, July 25, 2024, 11:30 EDT (2024). <https://www.wired.com/story/google-deepmind-alphaproof-ai-math/>