

Viewpoint: Can AI chatbots understand the words they're processing?

Artificial intelligence seems more powerful than ever, with chatbots like Bard and ChatGPT capable of producing uncannily humanlike text. But for all their talents, these bots still leave researchers wondering: Do such models [actually understand](#) what they are saying? “Clearly, some people believe they do,” said the AI pioneer [Geoff Hinton](#) in a [recent conversation](#) with Andrew Ng.

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A theory developed by [Sanjeev Arora](#) of Princeton University and [Anirudh Goyal](#), a research scientist at Google DeepMind, suggests that the largest of today’s LLMs are not stochastic parrots. The authors argue that as these models get bigger and are trained on more data, they improve on individual language-related abilities and also develop new ones by combining skills in a manner that hints at understanding — combinations that were unlikely to exist in the training data.

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“It’s not Hemingway or Shakespeare,” Arora said, but the team is confident that it proves their point: The model can generate text that it couldn’t possibly have seen in the training data, displaying skills that add up to what some would argue is understanding.

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