

Read the following two passages and complete the writing tasks in your own words. You are encouraged to draw on your knowledge of the topics and your personal experiences. This test is 100-minute long.

PASSAGE A

In Defense of AI Hallucinations

No one knows whether artificial intelligence will be a boon or curse in the far future. But right now, there's almost universal discomfort and contempt for one habit of these chatbots and agents: hallucinations, those made-up facts that appear in the outputs of large language models like ChatGPT. In the middle of what seems like a carefully constructed answer, the LLM will slip in something that seems reasonable but is a total fabrication. Your typical chatbot can make disgraced ex-congressman George Santos look like Abe Lincoln. Since it looks inevitable that chatbots will one day generate the vast majority of all prose ever written, all the AI companies are obsessed with minimizing and eliminating hallucinations, or at least convincing the world the problem is in hand.

Obviously, the value of LLMs will reach a new level when and if hallucinations approach zero. But before that happens, I ask you to raise a toast to AI's confabulations.

Hallucinations fascinate me, even though AI scientists have a pretty good idea why they happen. An AI startup called Vectara has studied them and their prevalence, even compiling the hallucination rates of various models when asked to summarize a document. (OpenAI's GPT-4 does best, hallucinating only around 3 percent of the time; Google's now outdated Palm Chat—not its chatbot Bard!—had a shocking 27 percent rate, although to be fair, summarizing documents wasn't in Palm Chat's wheelhouse.) Vectara's CTO, Amin Ahmad, says that LLMs create a compressed representation of all the training data fed through its artificial neurons. "The nature of compression is that the fine details can get lost," he says. A model ends up primed with the most likely answers to queries from users but doesn't have the exact facts at its disposal. "When it gets to the details it starts making things up," he says.

Santosh Vempala, a computer science professor at Georgia Tech, has also studied hallucinations. "A language model is just a probabilistic model of the world," he says, not a truthful mirror of reality. Vempala explains that an LLM's answer strives for a general calibration with the real world—as represented in its training data—which is "a weak version of accuracy." His research, published with OpenAI's Adam Kalai, found that hallucinations are unavoidable for facts that can't be verified using the information in a model's training data.

That's the science/math of AI hallucinations, but they're also notable for the experience they can elicit in humans. At times, these generative fabrications can seem more plausible than actual facts, which are often astonishingly bizarre and unsatisfying. How often do you hear something described as so strange that no screenwriter would dare script it in a movie? These days, all the time! Hallucinations can seduce us by appearing to ground us to a world less jarring than the actual one we live in. What's more, I find it telling to note just which details the bots tend to concoct. In their desperate attempt to fill in the blanks of a satisfying narrative, they gravitate toward the most statistically likely version of reality as represented in their internet-scale training data, which can be a truth in itself. I liken it to a fiction writer penning a novel inspired by real events. A good author will veer from what actually happened to an imagined scenario that reveals a deeper truth, striving to create something more real than reality.

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Besides providing an instructive view of plausible alternate realities, the untethering of AI outputs from the realm of fact can also be productive. Because LLMs don't necessarily think like humans, their flights of statistical fancy can be valuable tools to spur creativity. "That's why generative systems are being explored more by artists, to get ideas they wouldn't have necessarily have thought of," says Vectara's Ahmad. One of the most important missions of those building AI is to help solve humanity's intractable problems, ostensibly by coming up with ideas that leap past the bounds of human imagination. Ahmad is one of several

people I spoke with who believe that even if we figure out how to largely eliminate those algorithmic fibs, we should still keep them around. “LLMs should be capable of producing things without hallucinations, but then we can flip them into a mode where they can produce hallucinations and help us brainstorm,” he says. Vempala of Georgia Tech agrees: “There should be a knob that you can turn,” he says. “When you want to drive your car you don’t want AI to hallucinate what’s on the road, but you do when you’re trying to write a poem for a friend.”

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● Writing Tasks (50%)

Read the excerpt of the opinion article “In Defense of AI Hallucinations” from *Wired* magazine. First, summarize the author’s view on the utility of AI hallucinations (20%). Then, critically assess the author’s view, using specific references from the excerpt to support your analysis. (30%)

PASSAGE B

Conversation Ballgame

by Nancy Masterson Sakamoto (1982)

After I was married and had lived in Japan for a while, my Japanese gradually improved to the point where I could take part in simple conversations with my husband and his friends and family. And I began to notice that often, when I joined in, the others would look startled, and the conversational topic would come to a halt. After this happened several times, it became clear to me that I was doing something wrong. But for a long time, I didn't know what it was. Finally, after listening carefully to many Japanese conversations, I discovered what my problem was. Even though I was speaking Japanese, I was handling the conversation in a western way.

A western-style conversation between two people is like a game of tennis. If I introduce a topic, a conversational ball, I expect you to hit it back. If you agree with me, I don't expect you simply to agree and do nothing more. I expect you to add something – a reason for agreeing, another example, or an elaboration to carry the idea further. But I don't expect you always to agree. I am just as happy if you question me, or challenge me, or completely disagree with me. Whether you agree or disagree, your response will return the ball to me. And then it is my turn again. I don't serve a new ball from my original starting line. I hit your wall back again from where it has bounced. I carry your idea further, or answer your questions or objections, or challenge or question you. And so the ball goes back and forth, with each of us doing our best to give it a new twist, an original spin, or a powerful smash. And the more vigorous the action, the more interesting and exciting the game. Of course, if one of us gets angry, it spoils the conversation, just as it spoils a tennis game. But getting excited is not at all the same as getting angry. After all, we are not trying to hit each other. We are trying to hit the ball. So long as we attack only each other's opinions, and do not attack each other personally, we don't expect anyone to get hurt. A good conversation is supposed to be interesting and exciting.

If there are more than two people in the conversation, then it is like doubles in tennis, or like volleyball. There's no waiting in line. Whoever is nearest and quickest hits the ball, and if you step back, someone else will hit it. No one stops the game to give you a turn. You're responsible for taking your own turn. But whether it's two players or a group, everyone does his best to keep the ball going, and no one person has the ball for very long.

A Japanese-style conversation, however, is not at all like tennis or volleyball. It's like bowling. You wait for your turn, and you always know your place in line. It depends on such things as whether you are older or younger, a close friend or a relative stranger to the previous speaker, in a senior or junior position, and so on. When your turn comes, you step up to the starting line with your bowling ball, and

carefully bowl it. Everyone else stands back and watches politely, murmuring encouragement. Everyone waits until the ball has reached the end of the alley, and watches to see if it knocks down all the pins, or only some of them, or none of them. There is a pause, while everyone registers your score. Then, after everyone is sure that you have completely finished your turn, the next person in line steps up to the same starting line, with a different ball. He doesn't return your ball, and he does not begin from where your ball stopped. There is no back and forth at all. All the balls run parallel. And there is always a suitable pause between turns. There is no rush, no excitement, no scramble for the ball.

No wonder everyone looked startled when I took part in Japanese conversations. I paid no attention to whose turn it was, and kept snatching the ball halfway down the alley and throwing it back at the bowler. Of course the conversation died. I was playing the wrong game.

This explains why it is almost impossible to get a western-style conversation or discussion going with English students in Japan. I used to think that the problem was their lack of English language ability. But I finally came to realize that the biggest problem is that they, too, are playing the wrong game. Whenever I serve a volleyball, everyone just stands back and watches it fall, with occasional murmurs of encouragement. No one hits it back. Everyone waits until I call on someone to take a turn. And when that person speaks, he doesn't hit my ball back. He serves a new ball. Again, everyone just watches it fall. So I call on someone else. This person does not refer to what the previous speaker has said. He also serves a new ball. Nobody seems to have paid any attention to what anyone else has said. Everyone begins again from the same starting line, and all the balls run parallel. There is never any back and forth. Everyone is trying to bowl with a volleyball. No wonder foreign English teachers in Japan get discouraged.

● Writing Tasks (50%)

1. **In about 150 words, summarize in your own words the main point of this essay**, including a clear explanation of how an American conversation style contrasts with the Japanese conversation style. Include the author's point of view in your summary, but do not include your own opinion. Do not copy sentences directly from the reading passage. (25%)

2. This article was written in 1982, more than forty years ago. At that time, most American teachers had an impression that Asian students (not just Japanese) were very quiet and it was very difficult to have lively conversation or discussion with the students. **Based on your own experience as a learner, what is your reaction to this essay? Write your reflection in 250-300 words.**

Here are additional questions to help you think about how to answer this question:

- Do you think the author's conclusion about her Japanese students and foreign English teachers in Japan forty years ago can still be applied to Taiwanese students nowadays, or do Taiwanese students speak in a more "western-style" now?
- Is your own conversation style in your mother tongue (Chinese) more like the "western" style or the "Japanese" style? What about your English conversation style? Are they different or similar and why? Is English proficiency one reason?
- How can Taiwanese students be encouraged to speak English in a more "western" style? Is it an important thing to learn?

Give reasons to support and explain your points. You will be graded for your fluency of writing and language use. Feel free to express your opinion. (25%)