# AI-generated images show a world of stereotypes[1]



Artificial intelligence image tools have a tendency to spin up disturbing clichés: Africans are primitive. Europeans are worldly. Leaders are men. Prisoners are Black. These stereotypes don't reflect the real world; they stem from the data that trains the technology. Grabbed from the internet, these *troves* (宝库，此处用作反语) can be toxic[2].
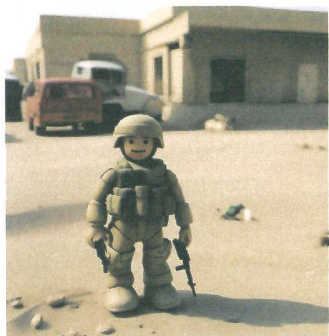
Stability AI, maker of the popular image generator Stable Diffusion XL, told *The Washington Post* it had made a significant investment in reducing bias in its latest model, which was released in July. But these efforts haven't stopped it from *defaulting to* (默认) cartoonish tropes. *The Post* found that despite improvements, the tool amplifies[3] outdated Western stereotypes, transferring sometimes bizarre clichés to basic objects, such as toys or homes.

"They're sort of *playing whack-a-mole* (打地鼠游戏) and responding to what people draw the most attention to," said Pratyusha Kalluri, an AI researcher at Stanford University.

[1] Christoph Schuhmann, co-founder of LAION, a nonprofit behind Stable Diffusion's data, argues that image generators naturally reflect the world of White people because the nonprofit that provides data to many companies, including LAION, doesn't focus on China and India, the largest population of web users. "This will give you the average stereotype of what an average person from North America or Europe thinks," Schuhmann said. "You don't need a data science degree to infer this."

Stable Diffusion is not alone in this *orientation* (态度). [2] In recently released documents, OpenAI said its latest image generator, DALL-E 3, displays "a tendency toward a Western point-of-view" with images that "disproportionately represent individuals who appear White, female, and youthful."

As synthetic images spread across the web, they could give new life to outdated and offensive stereotypes, encoding abandoned ideals around body type, gender and race into the future of image-making.

Like ChatGPT, AI image tools learn about the world through gargantuan[4] amounts of training data. Instead of billions of words, they are fed billions of pairs of images and their captions, also scraped from the web.

Tech companies have grown increasingly secretive about the contents of these data sets, partially because the text and images included often contain copyrighted and inaccurate material. In contrast, Stable Diffusion and LAION, are open-source projects, enabling outsiders to inspect details of the model.

Stability AI chief executive Emad Mostaque said his company views transparency as key to scrutinizing[5] and eliminating bias. "Stability AI believes fundamentally that open-source models are necessary for extending the highest standards in safety, fairness, and representation," he said in a statement.

Images in LAION, as in many data sets, were selected because they contain code called "alt-text," which helps software describe images to blind people. Though alt-text is cheaper and easier than adding captions, it's notoriously[6] unreliable — filled with offensive descriptions and unrelated terms intended to help images rank high in search.

Image generators spin up pictures based on the most likely *pixel* (像素), drawing connections between words in the captions and the images associated with them. These *probabilistic* (或然性的) pairings help explain some of the bizarre mash-ups churned out by Stable Diffusion XL, such as Iraqi toys that look like U.S. tankers and troops. That's not a stereotype: It reflects America's *inextricable* (无法解开的) association between Iraq and war.

## Words in context

**I. Find these words in the article. Then match each word with their definition**

| stereotype | toxic | amplify |
| gargantuan | scrutinize | notoriously |

1. _____ extremely large
2. _____ containing poison; poisonous
3. _____ to increase something in strength, especially sound
4. _____ to look at or examine somebody or something carefully
5. _____ in a way that is well-known or famous especially for something bad
6. _____ a fixed idea or image that many people have of a particular type of person or thing, but which is often not true in reality

**II. Complete each sentence with a suitable word in its proper form.**

| disproportionately | eliminate | encode |
| generator | orientation | offensive |
| primitive | transfer | |

1. To reduce waste, we must _____ single-use plastics from our daily routines.
2. In remote areas, people still rely on _____ farming techniques to cultivate their crops.
3. To complete the transaction, you will need to _____ the funds electronically to our account.
4. Programmers use algorithms to _____ sensitive data for secure transmission over the internet.
5. The solar _____ powered the entire campsite, providing electricity for lights and charging devices.
6. The wealthy elite often benefit _____ from tax breaks, widening economic inequality.
7. His _____ remarks during the meeting offended many colleagues, leading to strained relationships.
8. Her _____ towards environmental conservation guides her lifestyle choices and advocacy effort in the community.

**III. Translate the following expressions into Chinese.**
1. spin up
2. stem from
3. make a significant investment
4. give new life to
5. pairs of images and their captions
6. scraped from the web
7. grow increasingly secretive about
8. rank high in search
9. mash-ups
10. churn out

## Reading comprehension

Choose the best answer.
1. According to Christoph Schuhmann, why do image generators tend to reflect the world of White people?
   A. Because White people are more technologically savvy.
   B. Because White people are more likely to use image-based platforms.
   C. Because they don't focus on data from other countries with large populations.
   D. Because image generator algorithms inherently favor White individuals.

2. What did OpenAI reveal about its latest image generator, DALL-E 3?
   A. It is exclusively trained on data from Western countries.
   B. It accurately represents the diversity of human demographics.
   C. It is primarily focused on generating images of animals and landscapes.
   D. It is biased towards representing White, female, and youthful individuals.

3. What was highlighted as a potential drawback of using alt-text in image datasets?
   A. It often leads to biased descriptions of images.
   B. It significantly increases the cost of dataset creation.
   C. It requires advanced knowledge of computer programming.
   D. It is incompatible with modern image recognition algorithms.

4. According to Emad Mostaque, Stability AI's chief executive, what role does transparency play in addressing bias in AI models?
   A. It allows for more efficient data processing.
   B. It facilitates collaboration with other tech companies.
   C. It promotes innovation in image-generating technologies.
   D. It is essential for ensuring safety, fairness, and representation.

5. What implication does the article suggest regarding the future of image-making technologies?
   A. They will rely more heavily on human oversight.
   B. They will continue to reinforce outdated stereotypes.

C. They will be instrumental in dismantling biases.
D. They will prioritize accuracy over representation.

## Translation

**Translate the following sentences into English using the words or phrases given in the brackets.**

1. 这些图片中呈现出的刻板印象并不反映现实世界，它们源自训练技术的数据。(stem from)
2. 随着合成图像在网络上的传播，它们可能让过时和令人反感的陈词滥调重获新生。(give new life to)
3. AI图像工具是通过大量的训练数据了解世界的，它们被喂入数十亿对图像及其说明文字，这些图像和说明也是从网络上获取的。(feed)
4. 科技公司对这些数据集的内容越来越保密，部分原因是其中的文本和图像通常包含受版权保护的和不准确的材料。(increasingly)

## Sentence structures

**Read the following sentences and pay attention to their structures. Then try to translate the given sentences by modeling the structures.**

1. Christoph Schuhmann, co-founder of LAION, <u>a nonprofit behind Stable Diffusion's data</u>, <u>argues that</u> image generators naturally reflect the world of White people <u>because</u> the nonprofit <u>that</u> provides data to many companies, including LAION, doesn't focus on China and India, <u>the largest population of web users</u>.

**句型** 这个句子的主干是Christoph Schuhmann argues that ...，that后面的部分都是宾语从句。该宾语从句中有一个because连接的原因状语从句。第二个that引导了一个定语从句，修饰先行词the nonprofit。a nonprofit behind Stable Diffusion's data 和 the largest population of web users都是同位语。

**仿写** 李明是这家网红餐厅的经理，他解释说他们的菜单自然而然以传统的上海菜为特色，因为他们的顾客主要是周围社区的当地居民。

2. In recently released documents, <u>OpenAI said its latest image generator, DALL-E 3, displays</u> "a tendency toward a Western point-of-view" with images <u>that</u> "disproportionately represent individuals who appear White, female, and youthful."

**句型** 这个句子的主干是OpenAI said，后面部分都是宾语从句。从句的主干是 its latest image generator displays a tendency toward ...，toward后面部分都是宾语，其中that引导了一个定语从句，修饰先行词images。DALL-E 3是同位语。

**仿写** 在最近发布的报告中，这家环保组织强调了对工业化国家的偏好，指出他们的研究结果过度代表了GDP较高和技术发达的地区。

## Text structure

**Finish the table according to the article.**

| | |
|---|---|
| **Bias in AI image tools** | • There is a tendency of artificial intelligence image tools to spin up stereotypes. This stems from the data used to (1)_____.<br>• Despite attempts to reduce bias, AI image tools like Stable Diffusion XL and DALL-E 3 still (2)_____ outdated Western stereotypes.<br>• Alt-text helps software describe images to blind people, but it is unreliable and can (3)_____ biases.<br>• Image generators churn out bizarre mash-ups based on (4)_____ between words in captions and associated images. |
| **Implications of synthetic images** | • Synthetic images generated by AI tools could (5)_____ outdated stereotypes and encode biases into the future of image-making.<br>• The spread of these images online poses a risk of reinforcing offensive stereotypes related to (6)_____. |
| **Data processing and transparency** | • AI image tools learn about the world through vast amounts of training data, which are often kept (7)_____ due to copyrighted and inaccurate material.<br>• Projects like Stable Diffusion and LAION are open-source projects. They allow transparency and scrutiny of the models, and highlight the fundamental belief that open-source models are necessary for maintaining high standards in (8)_____. |