Homework 9: More Illustrations of AI

Due November 20th at 10pm

1 Illustrations Continued

Your main task for this week is to finish your illustrations for "When Robot and Crow Saved East St. Louis".

You must submit 10 images. This can include your images from last week, or you may replace some of those images. Your images should work together to tell the story, just like illustrations in a picture book. They should cover different events and characters in the story.

Submit your final images along with their prompts. Please upload each as an individual file.

In addition, **nominate 5 of your best images for consideration in our AI art contest.** You do not need to nominate them for particular categories: just list the 5 that you would like to be considered.

2 Further Explorations of Stable Diffusion

One aspect of text-to-image generation models that provoked much discussion is the text in generated images.[1] Although Stable Diffusion is not explicitly a multilingual model, it's also not *not* a multilingual model: 2/5ths of its training data, the laion2B-multi subset, consists of image-text pairs for languages other than English.

Run an experiment to explore the multilingual performance of Stable Diffusion. You can pick one of two options:

Option 1: In-depth bilingual comparison If you speak another language, you can run an experiment exploring Stable Diffusion's performance on that language in depth. Pick 10 target domains: for instance, food, animals, etc. Construct 5 prompts in each domain.

For each prompt, record Stable Diffusion's success. Compare to English versions of the prompts.

Submit a record of your experiment as a table. Each row should be a single prompt, and the columns should record the domain, the prompt, the language, and whether the model succeeds.

Option 2: Multilingual comparison of a single domain If you don't speak another language, you can do a broader exploration that requires less in-depth knowledge. Pick a single domain: food, animals, etc. Construct 10 prompts within the domain. For instance, you might explore 10 different kinds of animals.

[1] For example, see this Vice article for an overview of a Twitter debate over whether DALL-E had "invented its own language."

Next, pick 5 languages to explore. Use Google Translate to translate your prompts from English to those languages. For each translated prompt, record Stable Diffusion's success: i.e, if your prompt is about a cat, is there a cat in the generated image?

Submit a record of your experiment as a table. Each row should be a single prompt, and the columns should record the domain, the prompt, the language, and whether the model succeeds.

3 Responses to *When Robot and Crow Saved East St. Louis*

"When Robot and Crow Saved East St. Louis" was published as part of Slate's Future Tense series, which brings together sci-fi writers and technologists. Read the response piece for "When Robot and Crow Saved East St. Louis", which was written by Janelle Shane.

Question 1

Shane's response was written three years ago. Much has changed in AI since then. Identify some places in Shane's response that seem out-of-date to you. Do recent AI advances lead you to disagree with Shane's broader views on the story, or do you think they reinforce her original points?

Question 2

Shane picks up on a number of features of the story that are reminiscent of fairy tales. Comment on the fairy tale theme in her response. Is this similar or different to other science fiction media (fiction, movies, games) that you have seen, read, or played?

4 Ethics of Stable Diffusion

Text-to-image generation models have sparked many creative applications and broadened the accessibility of digital illustration. However, they have also raised a number of ethical issues.

Read this Ars Technica piece on ethical issues surrounding Stable Diffusion. Discuss your opinions about the ethical implications of Stable Diffusion and other text-to-image generation models. Talk about each of the following issues:

- Deepfake generation
- Artist imitation / copyright issues
- Reproduction of cultural biases