

UMBRACOSPARK #SPARKQA

Decorating your Umbraco Content with AI

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Choosing an image for an article

- Google, [Unsplash](#), [Pexels](#)... Bing
 - Labelled for reuse
- Ask designer for specific scenario
- Ask AI?



Generative AI

- Using AI to generate images, content, audio and [recipes](#)!
- Image generation tools like:
 - Stability AI's [Stable Diffusion](#)
 - NVIDIA [GauGAN360](#)
 - [Midjourney](#) AI
 - [WOMBO Dream](#)
 - OpenAI's [DALL-E 2](#)
 - DALLE-2 [Image API](#) available November 2022



DALL-E API

Post to the API

POST ▼ <https://api.openai.com/v1/images/generations>

Params Authorization Headers (10) **Body** ● Pre-request Script Tests Settings

☐ none ☐ form-data ☐ x-www-form-urlencoded ☒ raw ☐ binary ☐ GraphQL **JSON** ▼

```
1 {
2   "prompt": "Decorate content with an idea",
3   "n": 2,
4   "size": "1024x1024"
5 }
```

JSON response using Shared Access Signature (SAS) token

Body Cookies Headers (10) Test Results

Pretty Raw Preview Visualize **JSON** ▼

```
1 {
2   "created": 1678199555,
3   "data": [
4     {
5       "url": "https://oaidalleapiprodscus.blob.core.w:
           st=2023-03-07T13%3A32%3A35Z&se=2023-03-07T1!"
```



Decorating content with an idea

Image prompt from Umbraco

- Prepopulated with doctype (if exists)
- User can enter a fresh phrase



User submits

- Sends text prompt to OpenAI API via API Controller
- OpenAI API key in appsettings.json
- Bearer token authentication



OpenAI generates images

- Returns image URLs



App displays images

- User selects images to save



Save images

- Using MediaService



umpAInt

Home

Content

Title*

The title for the homepage.

Home

Summary

Optional. The summary for the homepage.

This is home

Image prompt

Optional. Image prompt to generate AI images from.

This is my garden office, with a cat, in purple

This is my garden office, with a cat, in purple

Generate

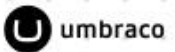
Page image

An image to use for this page

Save and preview

Save

Site / Home

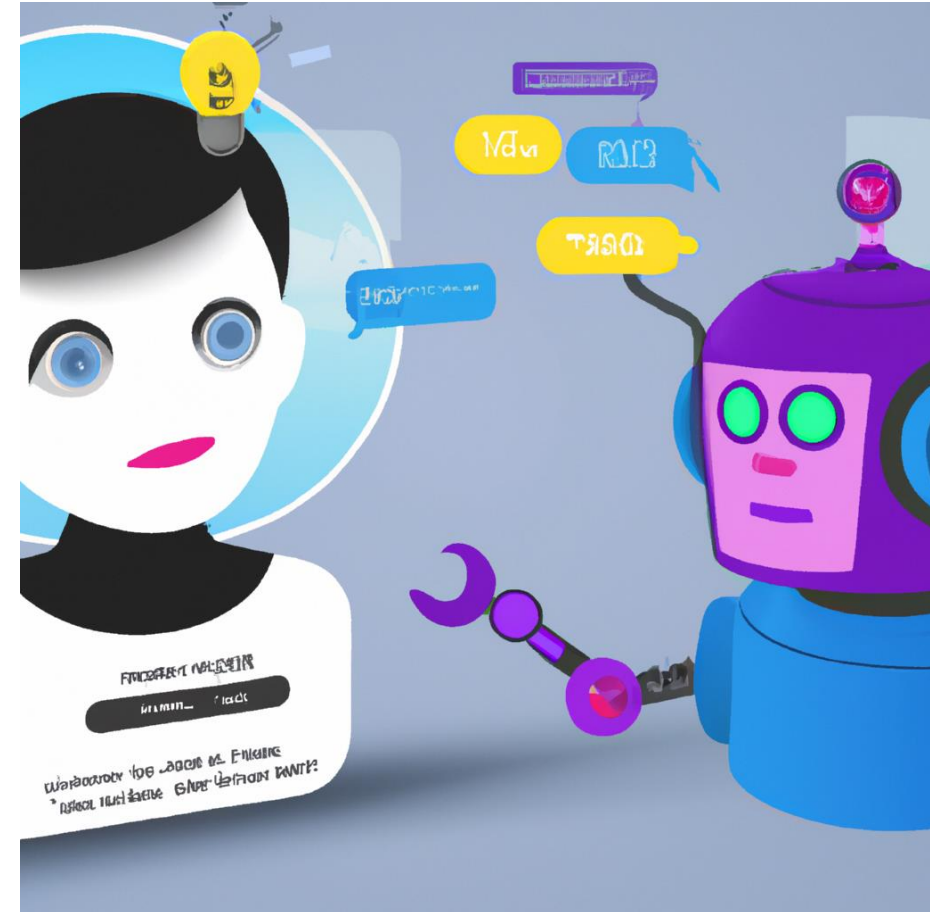


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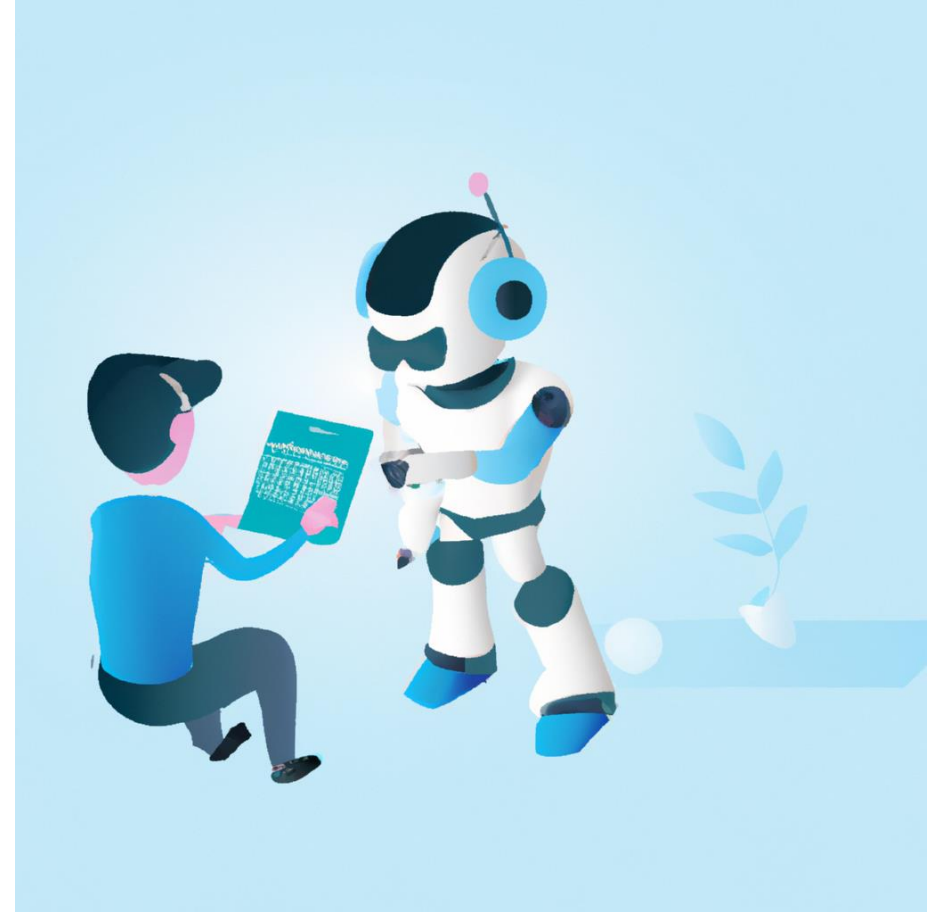
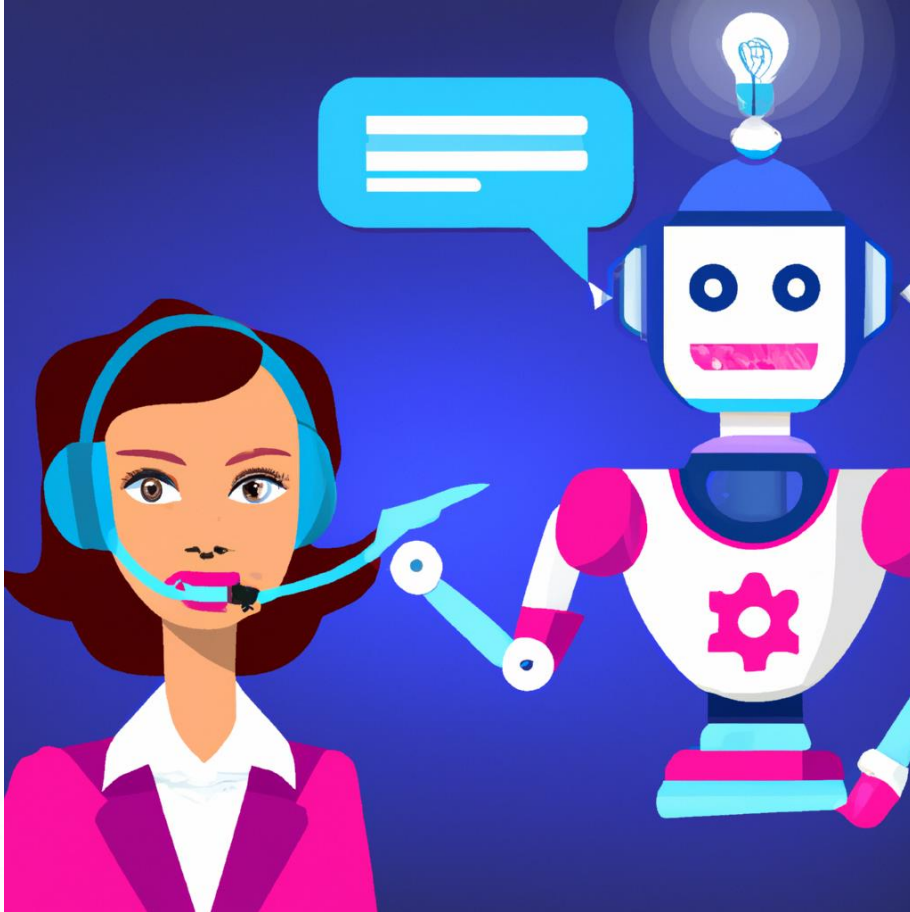
Sketching an idea

- Using a real article as an example
- [Powering up a Customer Service Bot with AI](#)





Powering up a customer service helper bot with AI





#SPARKQA



Elephant in the room



- What journey did the data go on to feed these images?
- Is it art?



Under the Hood

- DALL-E and Stable Diffusion
 - Powered by billions of images
 - Use **deep learning**
 - Diffusion-based, text-to-image generation model
- [Stable Diffusion 2](#)
 - “trained on an aesthetic subset of the LAION-5B dataset” - [HuggingFace](#)
- LAION datasets are from [commoncrawl.org](#)
 - LAION-5B preferring high quality images without watermarks



Analysis

- [Waxy.org](#) Stable Diffusion 2 analysis:
- 47% of the 2% image sample came from 100 different domains:
 - [WordPress](#), [Blogspot](#), [Flickr](#), [DeviantArt](#) and [Wikimedia Commons](#)
 - [Pinterest](#) 8.5%
 - [Fine Art America](#) 5.8%



Lawsuits

- [Stability AI](#), [DeviantArt](#), and [Midjourney](#) are being sued for their use of [Stable Diffusion](#)
 - *“21st-century collage tool that remixes the copyrighted works of millions of artists whose work was used as training data”* - [Stablediffusionlitigation.com](https://stablediffusionlitigation.com)
- [Artstation](#) don't use content to train Generative AI programs
- [DeviantArt](#) now opt-out of AI training by default



No AI!

- **HTML meta tag:**

- `<meta name="robots" content="noai, noimageai">`

- **HTTP Response Header:**

- X-Robots-Tag: noimageai, noai



Music and inspiration

- Ed Sheeran won 2022 copyright lawsuit
 - *“There’s only so many notes and very few chords used in pop music. Coincidence is bound to happen if 60,000 songs are being released everyday on Spotify.” – Ed Sheeran*
- Generate a song with input from another artist’s catalogue
 - If the song was influenced by Taylor Swift, should she get royalties?



“[ChatGPT is] basically a high tech
plagiarism”

– Noam Chomsky, linguist & philosopher,

[EduKitchen](#)



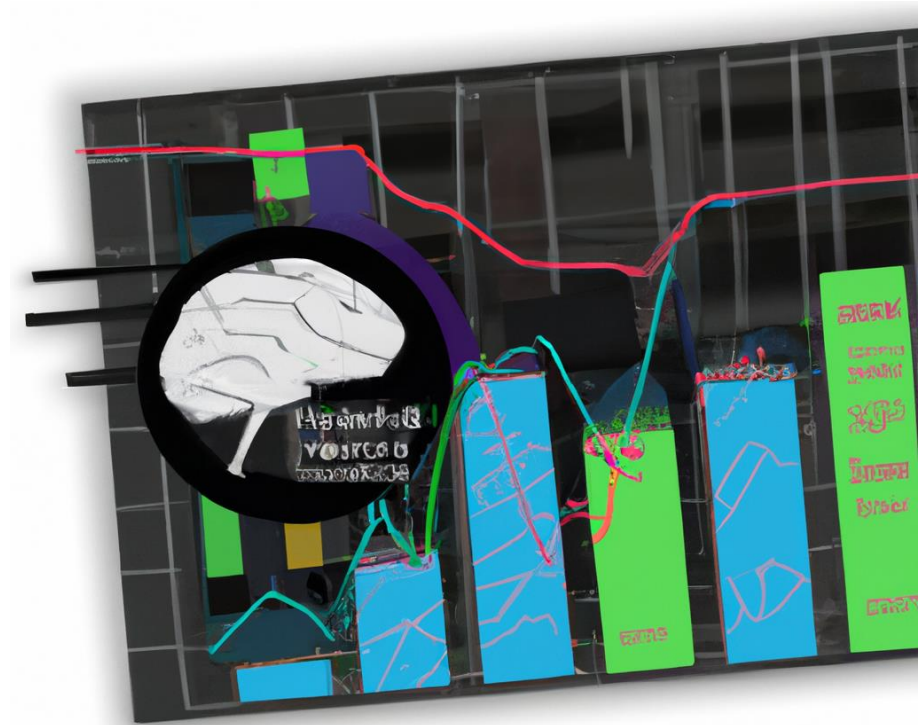
"Songs arise out of suffering, by which I mean they are predicated upon the complex, internal human struggle of creation and, well, as far as I know, algorithms don't feel. Data doesn't suffer."

- Nick Cave, [The Red Hand Files](#)



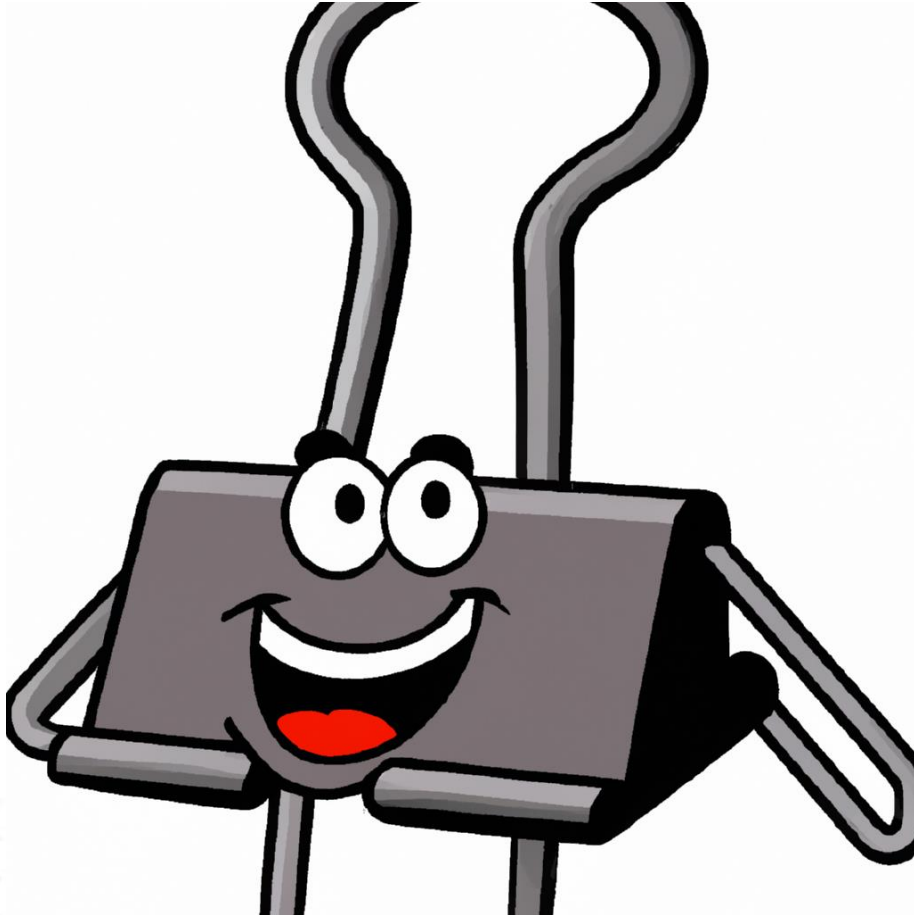
Is it art though?

- Creating images:
 - Our words
 - Other peoples work
- How diluted does it need to get?
- Microsoft & [FATE principles](#):
 - Fairness, Accountability, Transparency, and Ethics





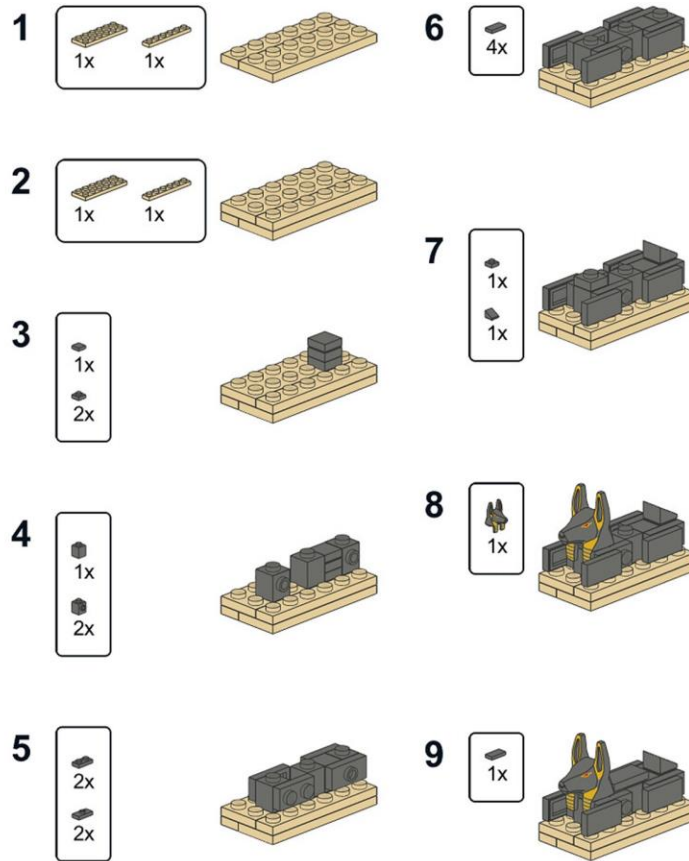
Big money



- Microsoft investment
 - “Multi-year, multi-billion dollar investment” - [OpenAI blog](#)
- OpenAI includes:
 - [DALLE-2](#) for images
 - [ChatGPT](#) for text
 - [Whisper](#) for Automatic Speech Recognition (ASR)
 - [Jukebox](#) for music
 - Videos...
- AI already part of our toolset
 - Grammarly
 - Predictive texts



Combining AI toolsets



- Took text from a paragraph in my [technical writing](#) article
- ChatGPT:
 - *"Create an illustration showcasing the importance of **clear and easy-to-read instructions** with advance warning for a positive user experience in technical product assembly and preparation."*

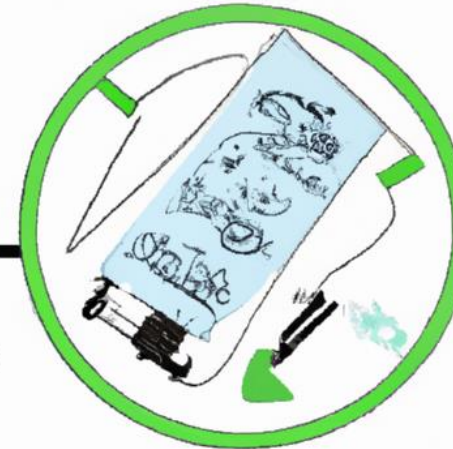


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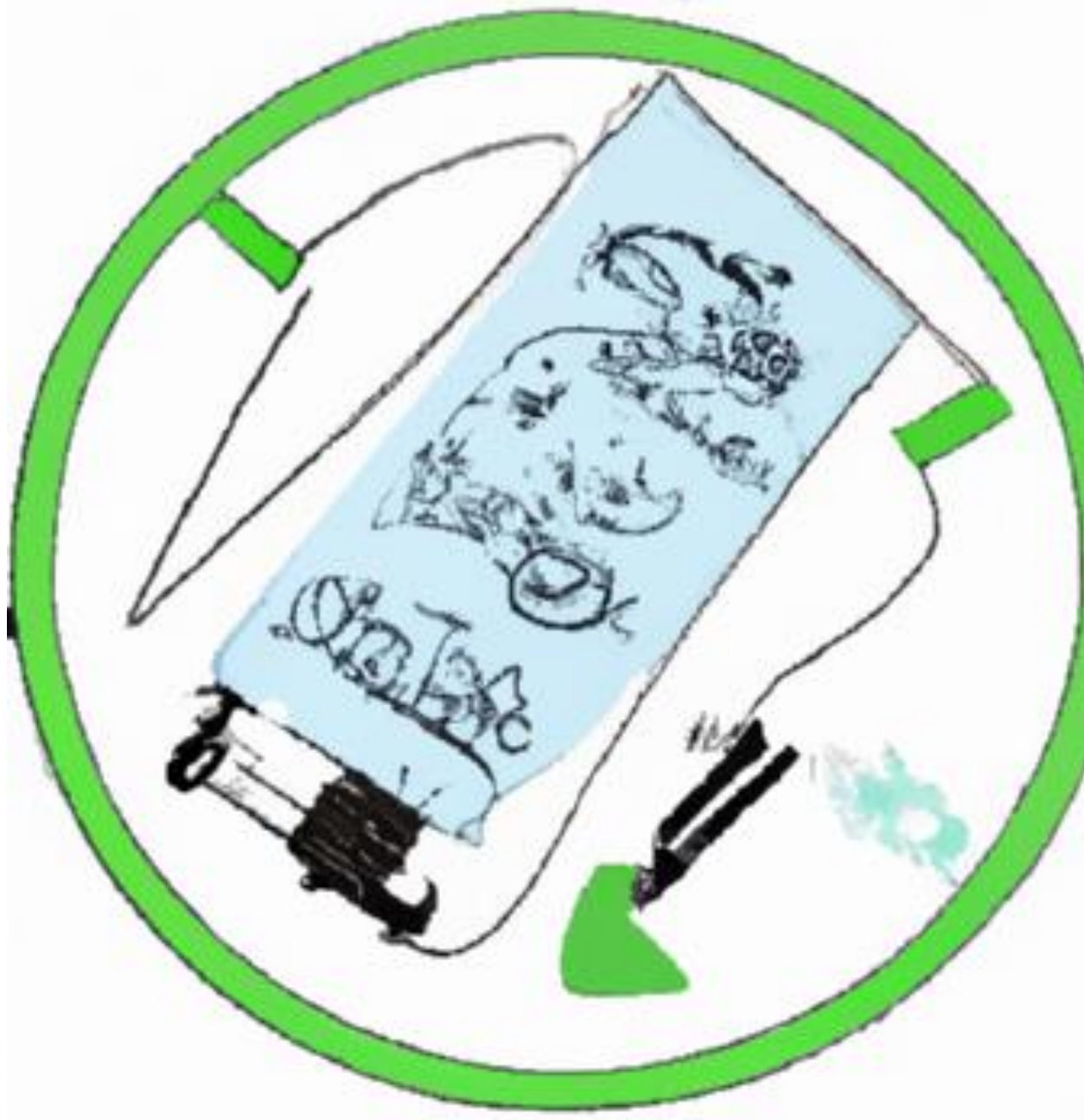
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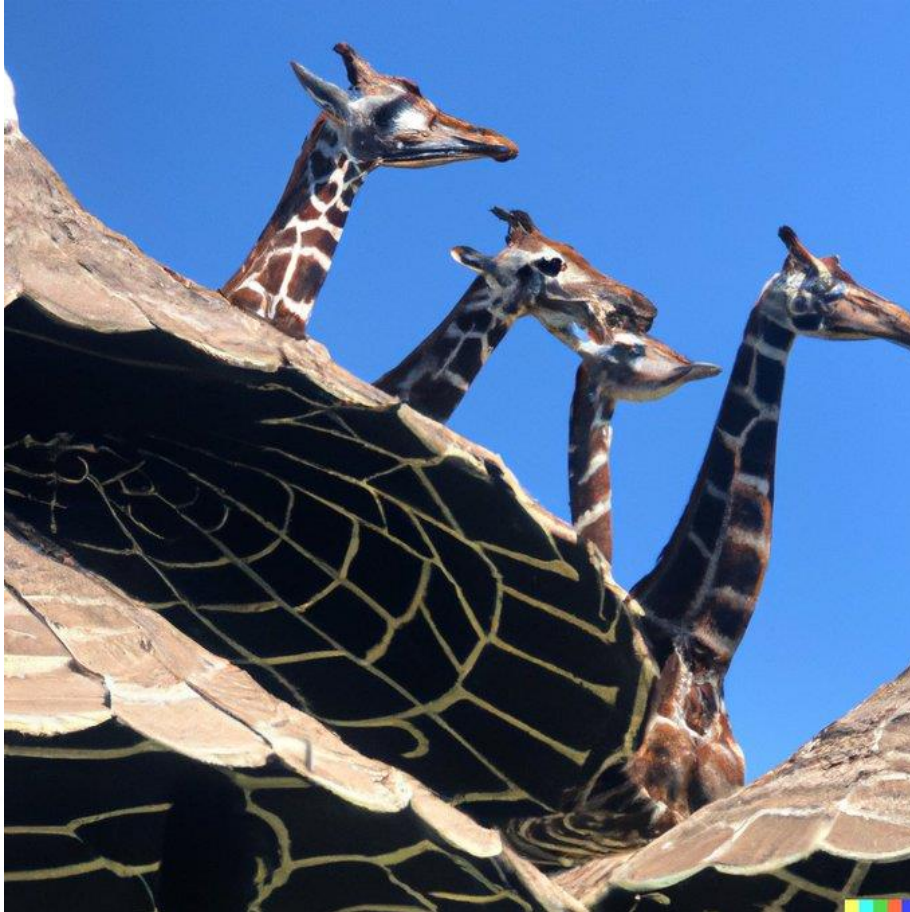


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Giraffes everywhere



- “*AI has a reputation of seeing giraffes everywhere*” – Janelle Shane
- ‘Giraffing’, termed by security expert Melissa Elliot
- What else could this apply to?



Diversity and representation

- Stable Diffusion AI “aesthetic” dataset bias
 - “[[LAION-2B\(en\)](#)]... consists of images that are primarily limited to English descriptions...white and western cultures are often set as the default” - [HuggingFace](#)
- DALL-E-2:
 - “inherits various biases from its training data, and its outputs sometimes reinforce societal stereotypes” – initial [DALL-E 2 Preview - Risks and Limitations](#)
 - “a new technique so that DALL-E generates images of people that more accurately reflect the diversity of the world’s population” - [Reducing Bias and Improving Safety in DALL-E-2](#)



Ableism and AI

- **Medical Model of Disability** figures disability as needing intervention
 - Historically, technology has been used to diagnose and rehabilitate disabilities
 - “codes disability as an “undesirable” and “outlier” trait”
 - [“Art, AI and Disability Futures”](#) by Lindsey Felt
- What could happen if AI mirrors this?
- “Nothing about us without us”
 - Building AI with people with disabilities



Closing thoughts

- Am I nervous as a developer?
- An inspiration tool to fix writer's block
 - ...rather than a replacement for a human composer
- Ethical bucket of AI-approved work for training data





References

- All images were generated from OpenAI's [DALL.E](#)*
- Generated OpenAI DALL.E-2 image prompts:
 - Slide 5: *"Decorate content with an idea"*
 - Slide 7, 8 & 9: *"Powering up a customer service helper bot with AI"*
 - Slide 10: *"Elephant in the room"*
 - Slide 18: *"Brains don't have an audit trail, high quality digital art with a graph" (edited variation)*
 - Slide 19: *"Clippy beefed up"*
 - Slide 21 & 22: *"Create an illustration showcasing the importance of clear and easy-to-read instructions with advance warning for a positive user experience in technical product assembly and preparation."*
 - Slide 23: *"There's millions of Geoffreys all under one roof"*
 - Slide 26: *"Rolling dice with story prompts on them"*

- **except app screenshots & Spark intro slide*

- Books

- ["You Look Like a Thing and I Love You"](#), Janelle Shane

- Links

- [PLAITests Twitter](#)
- [Kevin Jump DoStuff](#)
- [Our.Umbraco.UiExamples](#)
- [Content apps](#)
- [Umbraco Angular forum post](#)