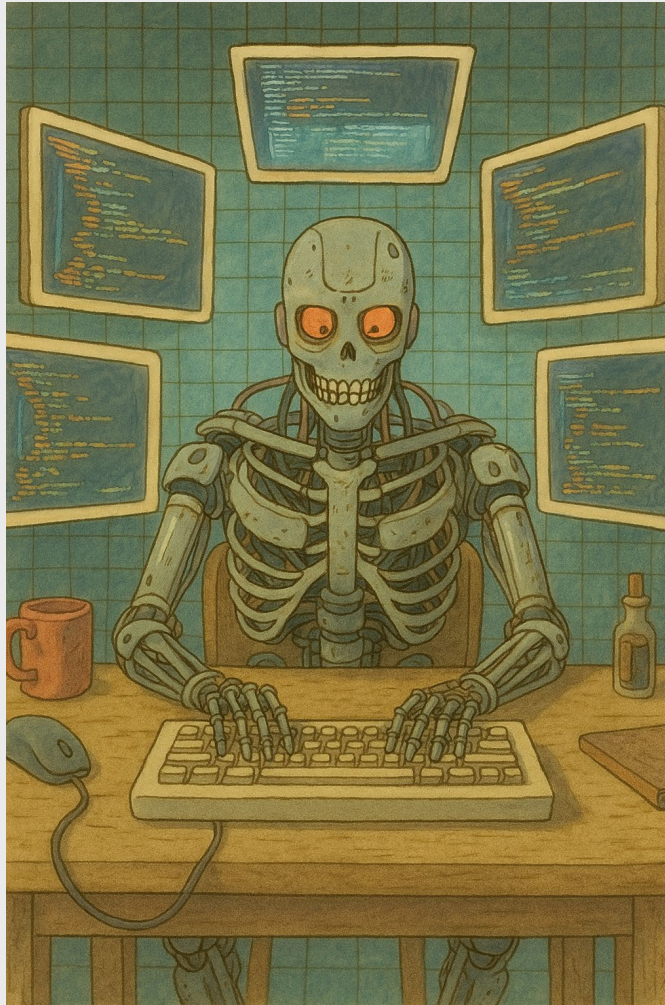


Building Apps with AI 2.0



More Advanced App Functions

- **Handling more file types**
 - **PDF**
 - **Images**
 - **Video**
- **Styling the app**
 - **Text based styling**
 - **Image based styling**
- **Improving and modifying apps**
- **ChatGPT vs Claude**
- **Build a Twitter Persona Reaction app that can react to**
 - **Text**
 - **Web pages**
 - **PDFs**
 - **Images**

File Types

- We can upload any type of file to our app
- We just to modify our backend code to process them correctly
- File types
 - PDF – we have a method in the GenAI class to extract the text from a PDF file: `read_pdf`
 - DOCX - we have a method in the GenAI class to extract the text from a Word docx file: `read_docx`
 - Images – the file will be saved to a temporary file with a file path. We can pass the file path to our GenAI functions to handle it: `generate_text`

PDF Method

```
def read_pdf(self, file_path):  
    """  
    Read and extract text from a PDF file.  
  
    This function opens a PDF file at the specified path, reads through all pages,  
    and extracts the text content into a single string.  
  
    Args:  
    |   file_path (str): The path to the PDF file to be read.  
  
    Returns:  
    |   str: A string containing all text extracted from the PDF file.  
  
    Raises:  
    |   FileNotFoundError: If the specified file does not exist.  
    |   PyPDF2.errors.PdfReadError: If the file is not a valid PDF.  
    """
```

PDF Method

```
def read_docx(self, file_path):  
    """  
    Read and extract text from a Word document (.docx) file.  
  
    This function opens a Word document at the specified path, reads through all paragraphs,  
    and extracts the text content into a single string with paragraphs separated by newlines.  
  
    Args:  
    |   file_path (str): The path to the Word document to be read.  
  
    Returns:  
    |   str: A string containing all text extracted from the document with paragraphs  
    |       separated by newline characters.  
  
    Raises:  
    |   FileNotFoundError: If the specified file does not exist.  
    |   ValueError: If the file is not a valid Word document.  
    """  
    doc = Document(file_path)  
    full_text = []  
    for para in doc.paragraphs:  
        full_text.append(para.text)  
    return '\n'.join(full_text)
```

Image Method

- **generate_text** can now take image inputs, but as a list

```
def generate_text(self, prompt,  
                  instructions='You are a helpful AI named Jarvis',  
                  image_paths_list=None,  
                  model="gpt-4o-mini",  
                  output_type='text',  
                  temperature=1):
```

Video Files

- **Video files require extra work to process after we upload them to the app**
- **We need to install FFMPEG**
 - **Handles video processing backend**
 - **Different ways to install on Windows, Mac, and Linux**
- **To process video file we need to**
 - **Extract frames as images**
 - **Extract audio and convert to text**
 - **Give AI the frames as a list of image paths and the text in the prompt**
- **We will work with video files next week**


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STYLING APPS

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Styles for App

- We can ask the AI for suggestions for a style for the app

 give me 3 different styles for this app i could use tell me in a table

Here are three different style options you could use for the NeonPulse app, presented in a table format:

Style Name	Description	Color Palette	Typography	Special Effects
Neo-Tokyo	Inspired by Blade Runner and Japanese cyberpunk aesthetics with bright neon contrasts against dark backgrounds	Deep blacks, electric blues, neon pinks, and bright cyans	Futuristic sans-serif fonts with glitch effects	Rain animation effect in background, subtle grid overlay, kanji characters as decorative elements
Digital Wasteland	Post-apocalyptic tech aesthetic with distressed elements and amber/green terminal vibes	Amber, toxic greens, rusty reds, and muted grays	Monospace terminal fonts, glitchy text rendering	Static/noise effects, occasional "glitches" in the UI, distressed border elements, CRT monitor effect
Corporate Dystopia	Clean, minimal corporate aesthetic with hidden menace, inspired by games like Mirror's Edge	Sterile whites, clinical blues, splashes of red warning colors	Clean sans-serif fonts, corporate logos and iconography	Holographic UI elements, data visualization overlays, subtle surveillance visuals in background

Styling App with Text

- Then we can ask the AI to redo the app in the desired style
- Prompt: redo the app as Neo-Tokyo



The screenshot shows a mobile application interface with a dark blue, neon-themed background. At the top, the title 'ネオン・パルス' (Neon Pulse) is displayed in large, glowing blue Japanese characters, with 'NEON PULSE // TWEET ANALYZER' in smaller white text below it. A version tag 'v2.07.25 - Neo-Tokyo Build' is visible in a small box. Below the header is a table with five columns: ID, TWEET, FAVORITES, VIEWS, and ENGAGEMENT. The table contains ten rows of tweet data, each with a unique ID, the tweet text (some including emojis and links), and corresponding engagement metrics.

ID	TWEET	FAVORITES	VIEWS	ENGAGEMENT
RN-0000	@WilliamShatner Hop in, let's go to Mars!	145	1,155	12.55%
NT-0001	RT @WilliamShatner: Have I ever said anything bad about him? 🤖👉 No matter how murky the present may seem, the future is very bright and I believe Elon Musk represents the future. And no, I'm not going to Mars. 🤖	3,369	93,692	3.60%
KJ-0002	RT @amuse: LAWFARE? Why does every Democrat's family seem to run an NGO? Ashley Biden's NGO got \$250K from Harry and Meghan—right as Harry faced deportation for lying on his visa. He stayed. https://t.co/fvK1xX9scn	5,540	536,997	1.03%
KJ-0003	RT @cb_doge: BREAKING: Grok app is now available to all Android users in the US. https://t.co/ZoWrdQnbO7	4,148	542,648	0.76%
KJ-0004	@AravSrinivas Congrats	429	16,649	2.58%
RN-0005	@nicksortor Tech support always happy to help	2,471	72,000	3.43%
KJ-0006	@waitbutwhy 🤖	404	26,021	1.55%
TK-0007	@levie 🤖	291	16,718	1.74%
RN-0008	@teslaownersSV To be clear, this will affect the price of parts in Tesla cars that come from other countries. The cost impact is not trivial.	1,258	86,461	1.45%

Styling App with Images

make me a react app where i can upload a csv of tweets with columns text, favorite_count, view_count by dragging the file in. make the screen get lighter when i drag in the file, and i want to drag it anywhere on the screen. Then compute engagement = favorite_count/view_count and show the tweets in a table. make the font color get more red and radiant for higher engagement and more dull for lower engagement. give the app a cool name. give it a style like the image here



Claude 3.7 Sonnet



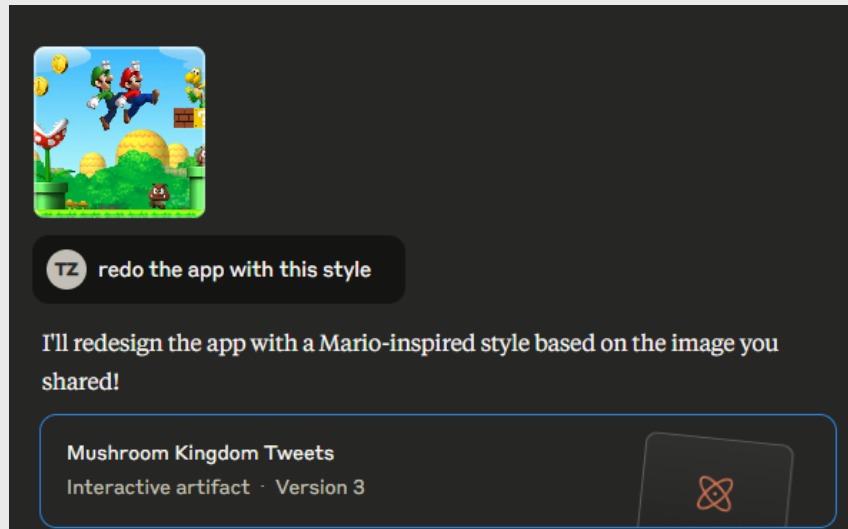
Spirited Tweets

Drag a new CSV file anywhere to load different data

Or select file

Tweet	Favorites	Views
@WesternLensman What a jerk	27,106	132,175
@WilliamShatner Hop in, let's go to Mars!	145	1,155
@MiIMileBattery Hawk tuah man	12,782	112,110
@SpaceChickJen People believe what the legacy media tells them. Unfortunately, propaganda works.	5,894	56,541

Styling App with Images



Mushroom Kingdom Tweets


Drag a new CSV file anywhere to load different data

[SELECT FILE](#)

Tweet	Stars	Views	Power
@WesternLensman What a jerk	★ 27,106	132,175	20.508%
@WilliamShatner Hop in, let's go to Mars!	★ 145	1,155	12.554%
@MilMileBattery Hawk tuah man	★ 12,782	112,110	11.401%
@SpaceChickJen People believe what the legacy media tells them. Unfortunately, propaganda works.	★ 5,894	56,541	10.424%
@IfindRetards Jackpot 🎰	★ 10,962	105,256	10.415%
@Noahpinion Don't make me summon @IfindRetards 🙄	★ 76,917	746,705	10.301%
@GarretLewis @SenMarkKelly He is the Senator for Ukraine	★ 3,391	36,440	9.306%

Styling App with Images

Starry Night Tweet Engagement Visualizer ▾



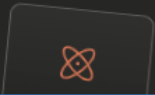
TZ


make me a react app where i can upload a csv of tweets with columns text, favorite_count, view_count by dragging the file in. make the screen get lighter when i drag in the file, and i want to drag it anywhere on the screen. Then compute engagement = favorite_count/view_count and show the tweets in a table. make the font color get more red and radiant for higher engagement and more dull for lower engagement. give the app a cool name and do it in the style of this image



I'll create a React application inspired by the Starry Night painting that lets you upload CSV files of tweets by dragging and dropping. The app will calculate engagement ratios and display tweets with color-coded text based on engagement levels.

StarryTweets: Tweet Engagement Visualizer

Interactive artifact



 </>

  Publish

Copy ▾

>

StarryTweets

Visualize tweet engagement in a starry night style

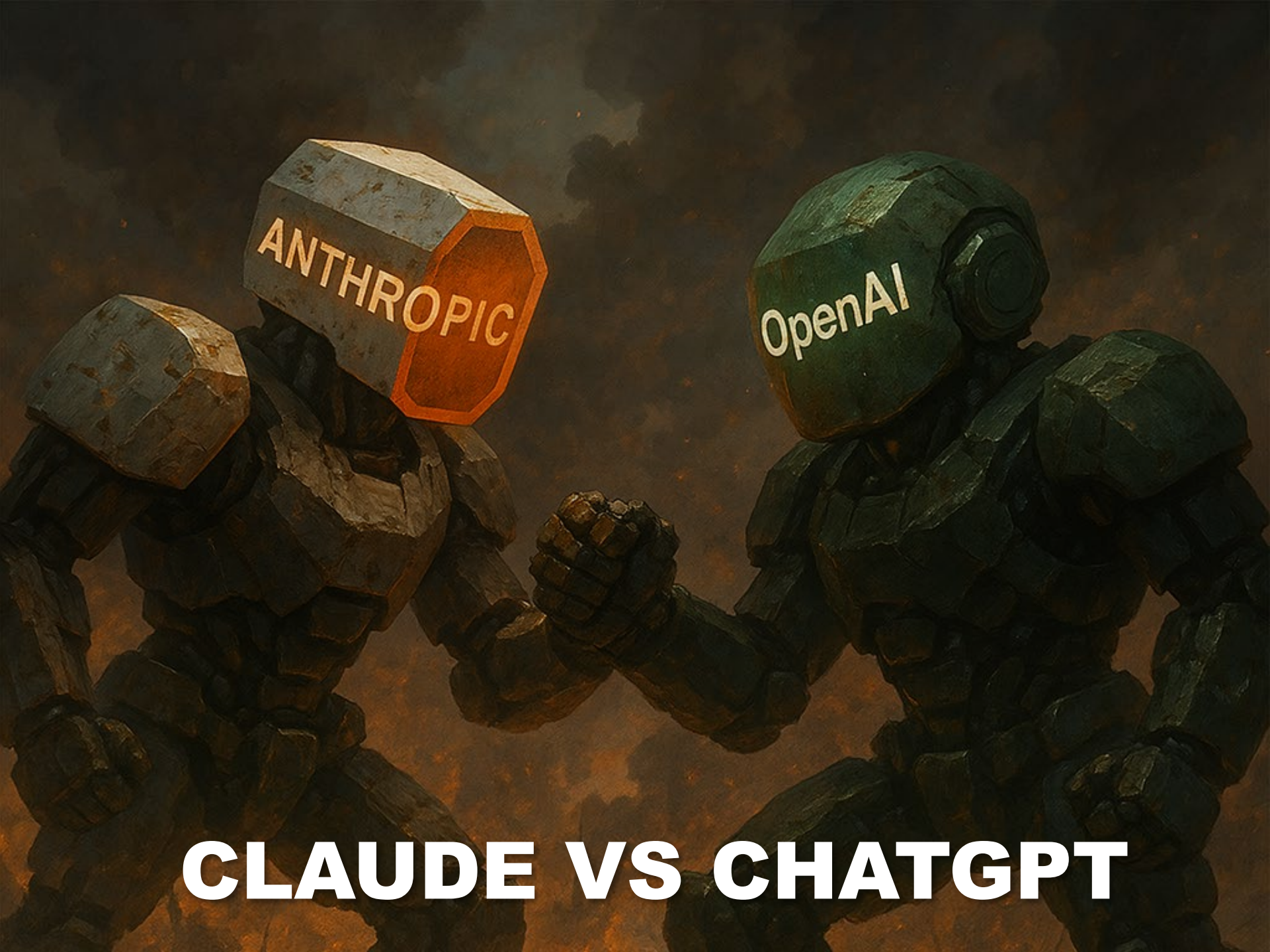
1019 Tweets Analyzed

Reset

Tweet	Favorites	Views	Engage
@WesternLensman What a jerk	27,106	132,175	20.5
@WilliamShatner Hop in, let's go to Mars!	145	1,155	12.5
@MilMileBattery Hawk tuah man	12,782	112,110	11.4
@SpaceChickJen People believe what the legacy media tells them. Unfortunately, propaganda works.	5,894	56,541	10.4

Improving the App

- We can have the AI make iterative improvements on our base app
- Make sure your base prompt is well structured, otherwise iterating on it will be a headache
 - Separate utils.py file for custom functions makes this process easier
- Improvement types
 - Change app style
 - Add/modify features, pages
- Prompts
 - User (initial prompt): App maker, app maker, make me an app.....
 - User: Ok that's cool, now let's add a page that
 - User: Ok, that's cool, now let's make the app style be ...



CLAUDE VS CHATGPT

ChatGPT vs Claude

- **Als have different strengths**
- **ChatGPT**
 - **Good at drawing images**
 - **Multimodal functionality – image to text, text to image, speech to text, text to speech, embeddings, RAG, tools**
- **Claude**
 - **Good at writing code**
 - **Very good at designing apps**

Coding

- Prompt: make me a react app where i can upload a csv of tweets with columns text, favorite_count, view_count by dragging the file in. make the screen get lighter when i drag in the file, and i want to drag it anywhere on the screen. Then compute $\text{engagement} = \text{favorite_count} / \text{view_count}$ and show the tweets in a table. make the font color get more red and radiant for higher engagement and more dull for lower engagement. **give the app a style that looks very cyberpunk** and give it a cool name

Coding: Claude vs ChatGPT

ChatGPT

CYBERTWEET: ENGAGE			
Drag and drop a CSV file anywhere on the screen with columns: text, favorite_count, view_count			
Text	Favorites	Views	Engagement
@WilliamShatner Hop in, let's go to Mars!	145	1155	0.126
RT @WilliamShatner: Have I ever said anything bad about h...	3369	93692	0.036
RT @amuse: LAWFARE? Why does every Democrat's family seem...	5540	536997	0.010
RT @cb_doge: BREAKING: Grok app is now available to all A...	4148	542648	0.008
@AravSrinivas Congrats	429	16649	0.026
@nicksortor Tech support always happy to help	2471	72000	0.034
@nickstony 🍕	404	26021	0.016
@nickstony 🍕	291	10718	0.017
@WilliamShatnerW to be clear, this will affect the price of...	1258	86461	0.013
@Sadie_NC 🍕	379	12833	0.030
@tszrl ❤️🍕	480	15143	0.027
@repdarrellissa 🍕	495	15463	0.032
🍕	51750	5556789	0.009
RT @alx: BREAKING: Elon Musk's America PAC announces the ...	6122	1103587	0.006


Claude

NeonPulse // Tweet Engagement Analyzer			
TWEET	FAVORITES	VIEWS	ENGAGEMENT
@WilliamShatner Hop in, let's go to Mars!	145	1,155	12.55%
RT @WilliamShatner: Have I ever said anything bad about him? 🍕🍕 No matter how murky the present may seem, the future is very bright and I believe Elon Musk represents the future. And no, I'm not going to Mars. 🍕	3,369	93,692	3.60%
RT @amuse: LAWFARE? Why does every Democrat's family seem to run an NGO? Ashley Biden's NGO got \$250K from Harry and Meghan—right as Harry faced deportation for lying on his visa. He stayed. https://t.co/fvK1xX9scn	5,540	536,997	1.03%
RT @cb_doge: BREAKING: Grok app is now available to all Android users in the US. https://t.co/ZoWrdQnbO7	4,148	542,648	0.76%
@AravSrinivas Congrats	429	16,649	2.58%
@nicksortor Tech support always happy to help	2,471	72,000	3.43%

Styling App with Images: ChatGPT vs Claude

ChatGPT

RadiantEngage



Drag and drop a CSV file of tweets anywhere on the screen to analyze engagement

Text	Favorite Count
@WilliamShatner Hop in, let's go to Mars!	145
RT @WilliamShatner: Have I ever said anything bad about him? 🤔 👉 No matter how murky the present may seem, the future is very bright and I believe Elon Musk represents the future. And no, I'm not going to Mars. 🤔	3369
RT @amuse: LAWFARE? Why does every Democrat's family seem to run an NGO? Ashley	

Claude

StarryTweets

Visualize tweet engagement in a starry night style

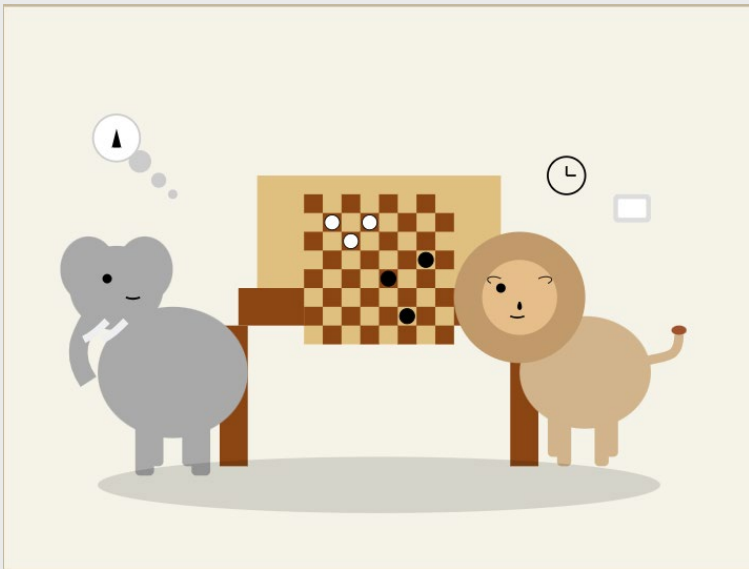
1019 Tweets Analyzed [Reset](#)

Tweet	Favorites	Views	Engage
@WesternLensman What a jerk	27,106	132,175	20.5
@WilliamShatner Hop in, let's go to Mars!	145	1,155	12.5
@MilMileBattery Hawk tuah man	12,782	112,110	11.4
@SpaceChickJen People believe what the legacy media tells them. Unfortunately, propaganda works.	5,894	56,541	10.4
@IfindRetards Jackpot 🎰	10,962	105,256	10.4

Image Generation

- Prompt: draw me a elephant playing chess with a lion

Claude



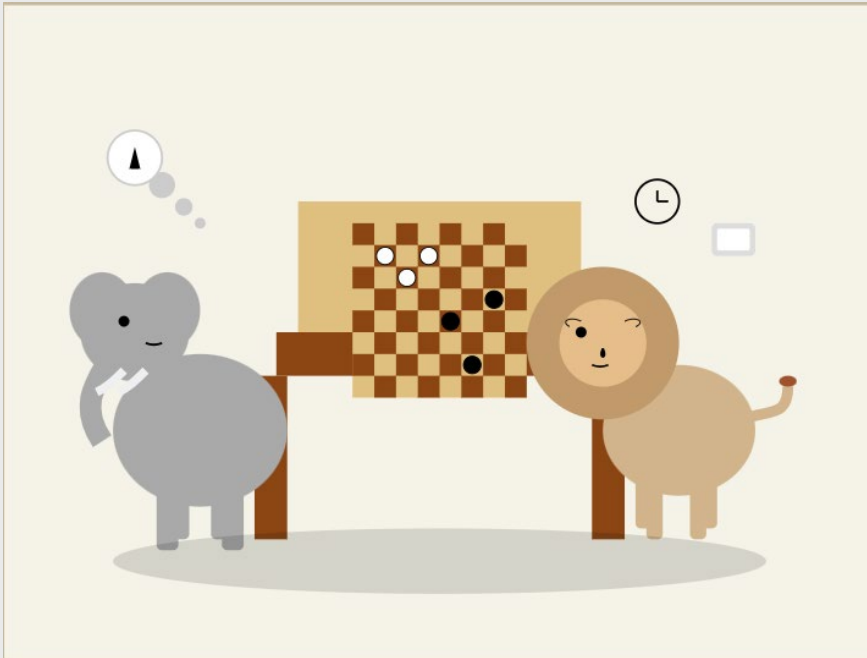
ChatGPT



Claude Image Code

- Claude cannot generate an image with a model. Instead, it writes code to physically draw the image

Image



Code

```
<!-- Eyes -->
<circle cx="110" cy="290" r="5" fill="#000"/>

<!-- Thinking expression -->
<path d="M 130 310 C 135 312, 140 312, 145 310" stroke="#000" stroke-width="2" fill="none"/>
</g>

<!-- Lion (right) -->
<g>
  <!-- Body -->
  <ellipse cx="620" cy="390" rx="70" ry="60" fill="#d2b48c"/>

  <!-- Mane -->
  <circle cx="550" cy="310" r="70" fill="#c19a6b"/>

  <!-- Head -->
  <circle cx="550" cy="310" r="40" fill="#e6be8a"/>

  <!-- Face details -->
  <circle cx="530" cy="300" r="5" fill="#000"/>
  <path d="M 550 315 C 545 325, 555 325, 550 315" stroke="#000" stroke-width="2" fill="#000"/>
  <path d="M 530 290 C 520 285, 510 290, 520 295" stroke="#000" stroke-width="1" fill="none"/>
  <path d="M 570 290 C 580 285, 590 290, 580 295" stroke="#000" stroke-width="1" fill="none"/>
</g>
```

Coding Session

- **Let's build Twitter Persona Reaction app version 2.0**
 - **React to PDF files**
 - **React to image files**
- **We will try to make the style look cool**
- **We will interact with the AI to make small improvements**