THE PROMPT

All your AI news

JUNE 2024

AI in Everything

FOLLOW THE TURBULENT JOURNEY OF THE NEWEST PRODUCTS AND DEVELOPMENTS IN AI

ISSUE #6

Institute for Computation
& Data-Enabled Insight

Contents

A Message From the Editor

Having the opportunity to dive into the newest AI technologies every day, exploring the revolutionary developments in the space that seemingly happen every day has been exhilarating in itself. However, being a part of AI Core, being connected with readers and audience members from our workshops gives purpose to the technology. What Artificial Intelligence is going to evolve into isn't about the science or math required for it to work, but about the people that it empowers – the people that connect over it, the conversations it sparks, and the people we share it with. I am incredibly excited to introduce this month's edition of The Prompt and for AI Core's future in connecting humanity through AI.

Enjoy!

**Jackson Grove**
Editor & AI Engineer

About AI Core

AI Core is a unique student engagement program at the University of Arizona that is creating jobs in the realm of Artificial Intelligence by employing students and pairing them up with real-world, early prototype and exploratory projects.

How it works:

Industry sponsors or UArizona faculty bring a project or challenge to the AI Core where our growing workforce of student employees are constantly exploring and developing with cutting-edge AI products, platforms, and techniques as they emerge from industry. In 2024 that means GPT development with OpenAI, Llama 3 for chatbots, and tools like Adobe Firefly, RunwayML, Blockade Labs and more for media and XR.
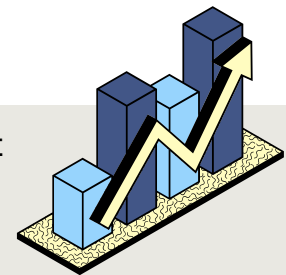
Our teams function in a hybrid, post-pandemic, work environment. Our physical office, a workspace we call "The Bench" is home to 8 in-person workstations and program leadership. But online via Discord our numbers swell 10X. In Summer of 2024 we are anticipating the AI Core Summer Internship (in partnership with the University of Arizona's Student Engagement & Career Development) to swell to almost 70 students!

Speaking and Engagement

Explore the forefront of artificial intelligence with AI Core at the University of Arizona. Our dedicated team of AI technologists is available to speak to your organization about the future of AI. Dive into crucial topics including education, public safety, ethics, labor, media, privacy, governance, and beyond, as we navigate the evolving landscape of AI together.

Whether you seek insights, strategy development, or implementation guidance, we're equipped to expedite your journey into the realm of AI. Let us collaborate to navigate the complexities and opportunities AI presents, ensuring your organization stays ahead in this transformative era.

AI Core's Summer Internship

Summer at AI Core begins with a 4-week fast track in custom GPT training, mastering Web API Programming, and harnessing Generative AI with Adobe Firefly. Each week the students tackle the subject matter through innovative teaching methods determined only in the past few weeks or months as the technologies are quite literally, brand new. After this 4-week bootcamp, students will tackle one of 12 real-world projects. Teaser: We've made a Saguaro give directions to Tombstone and suggest five things to do on your first night in Tucson. Stay tuned!
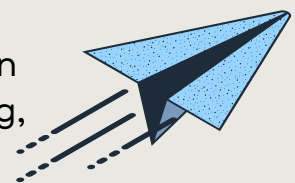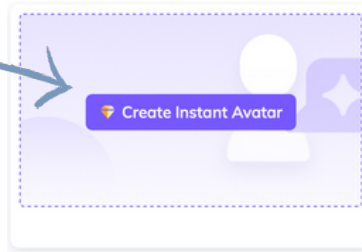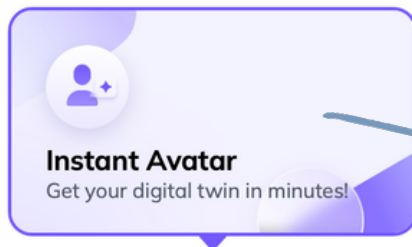
HeyGen Custom Avatars

Clone yourself in an AI-generated video.

HeyGen can train an AI model to produce videos of you talking, emulating your voice, facial expressions and gestures.

1. Navigate to HeyGen and select Instant Avatar, then select Create Instant Avatar.
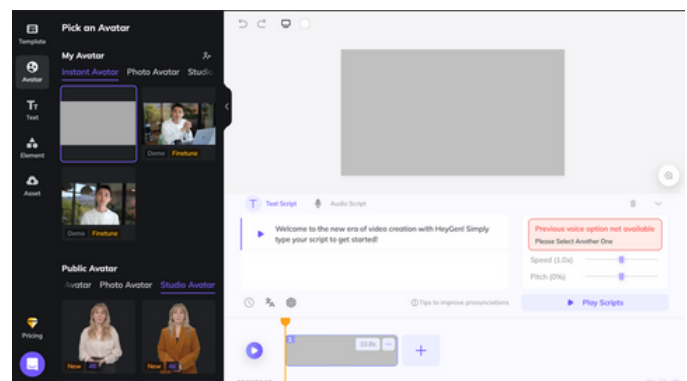

2. Follow the instructions to record your video and train your avatar.

1 Intro — 2 Instructions — 3 Upload — 4 Consent

HeyGen Plan Required

NOTE: You will have free tokens but will have to pay to make a long video

3. Wait for the avatar to complete training then create your video!

OpenAI Sora

The dawn of a revolution in AI-generated video technology.

https://openai.com/sora

OpenAI's revolutionary announcement of Sora, their new video model, is an incredibly massive leap in AI-generated video technology.

Not only will this lead to confusion in our digital information sphere about concerning what is real, but it will empower humanity to transform our creations, expediting innovation.

The model is <u>not yet available</u> to the public but upon its release it will revolutionize the ways in which we both create and consume digital information.

A comparison of AI-video models over the last month.
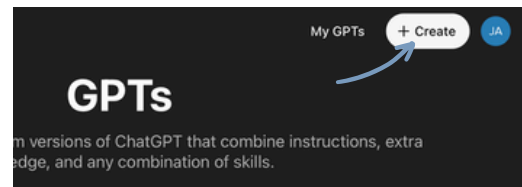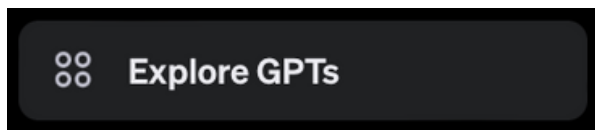

Google Lumiere
Jan 24, 2024

OpenAI Sora
Feb 15, 2024

4

Custom GPTs

Create a custom AI Agent tailored for your needs.

1. Navigate to ChatGPT and open the GPT Store from the side bar.

2. Tap the Create button on the top right corner.

3. This is your Custom GPT dashboard where you can set instructions for how your GPT should act. Set these in the Configure tab then test by chatting on the Preview page.

ChatGPT Plus Plan Required

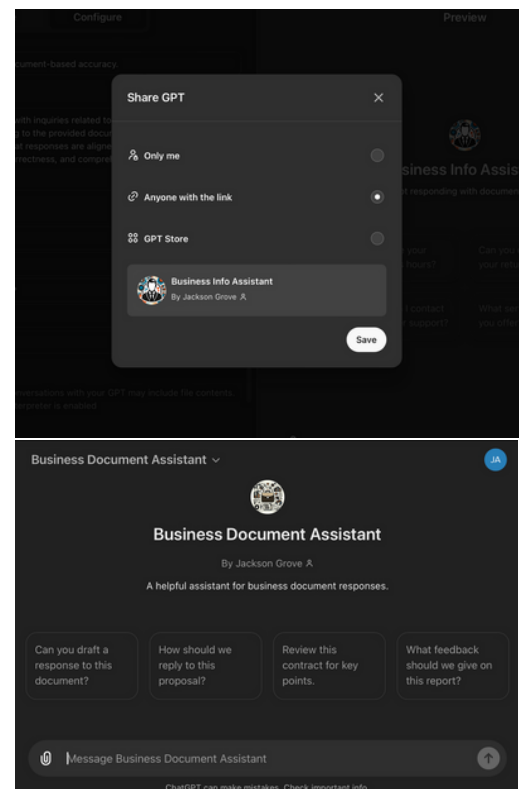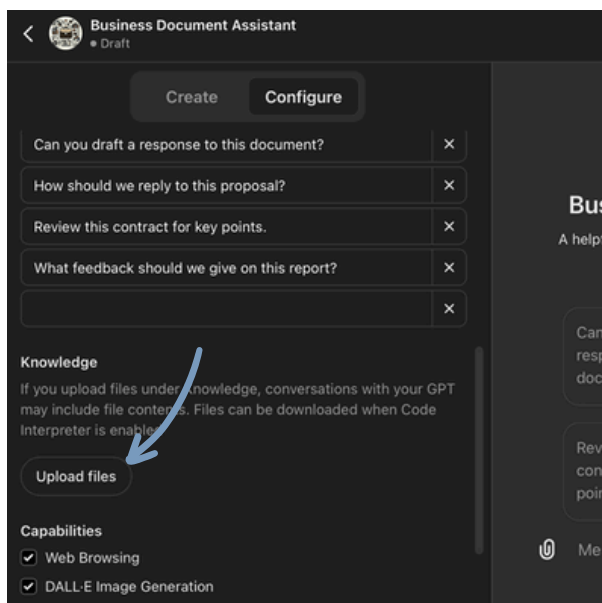NOTE: You will not be able to access GPTs without a subscription
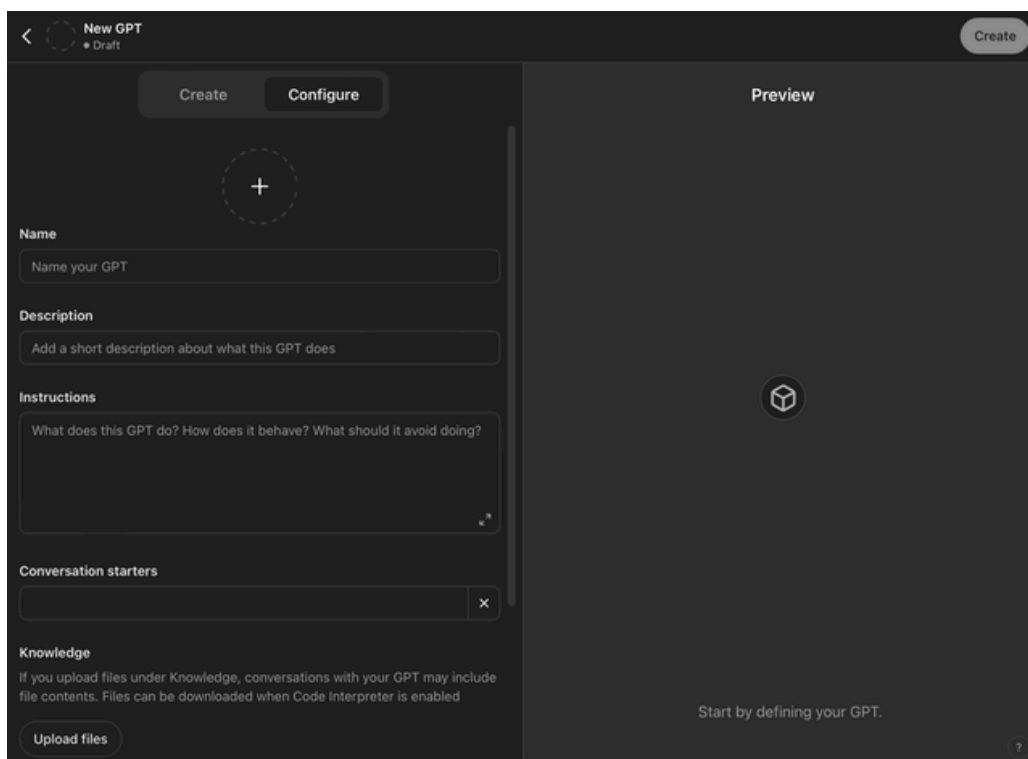
4. Click on the Create tab and describe the Custom GPT you want to create for ChatGPT to help.
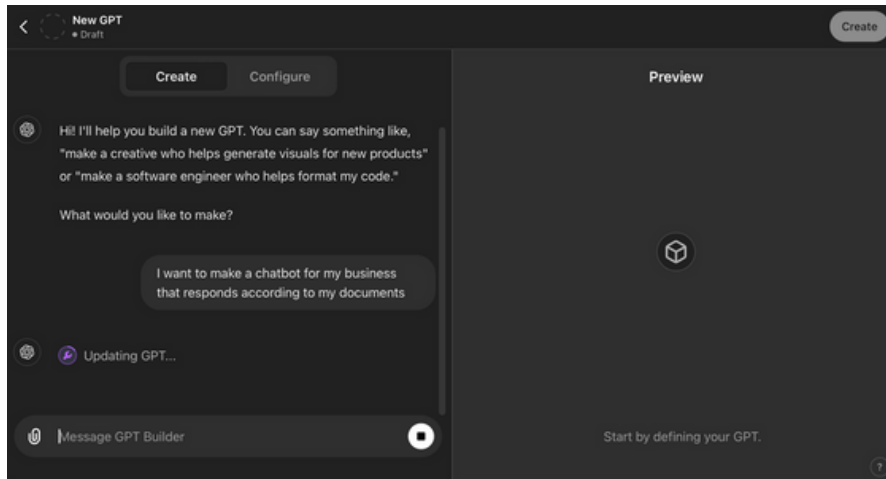
This will fill in the Configure settings for you (e.g. name, image, instructions).

5. Optionally add files or documents for the bot to refer to.

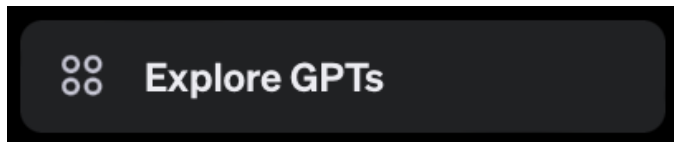**6.** Save the bot and start your first chat.
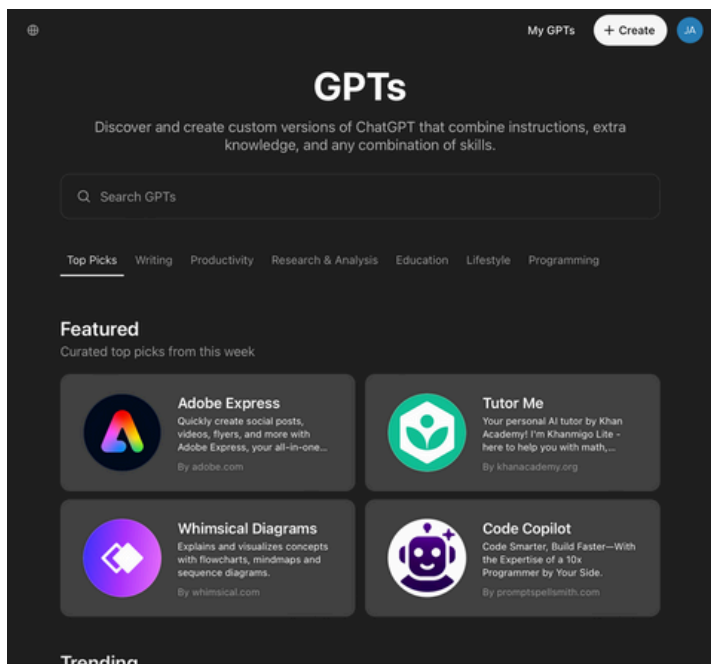
GPT Store

The marketplace for Custom GPTs.

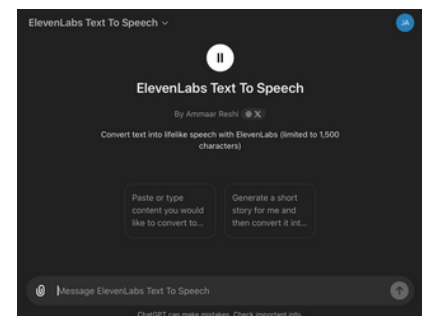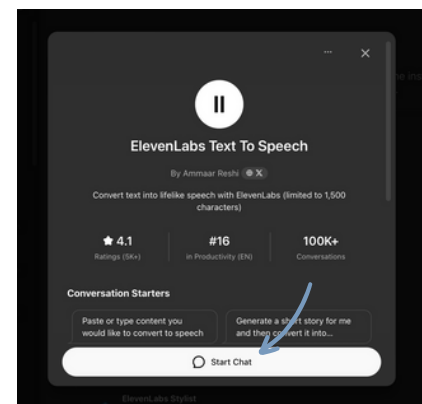1. Navigate to ChatGPT and open the GPT Store from the side bar.

2. Choose from the featured options or search for the kind of task you want to achieve.

3. Select a GPT and start chatting.

GPT Spotlight: Video Maker- by invideo AI

A powerful tool to generate videos from a document in just minutes.

1. Go to VideoMaker - by invideo AI.

https://chat.openai.com/g/g-h8l4uLHFQ-videomaker-by-invideo-ai

2. Upload a document or describe an idea. The more content it has, the better.

You

The Prompt Issue 1 - January 2024.pdf
PDF

Please turn this issue of The Prompt into an informational video for Youtube. Thanks in advance!
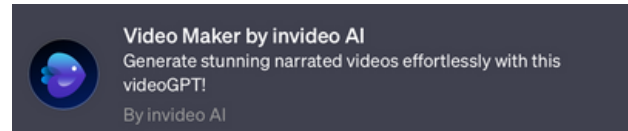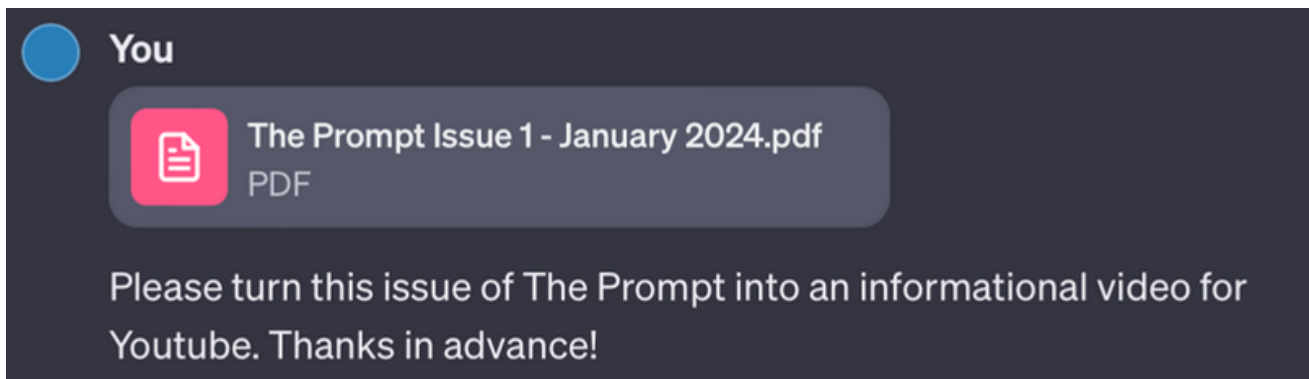
3. Allow the GPT to talk to invideo AI.

VideoMaker - by invideo AI
VideoMaker - by invideo AI wants to talk to video-ai.invideo.io
Only allow sites you trust
Confirm   Deny
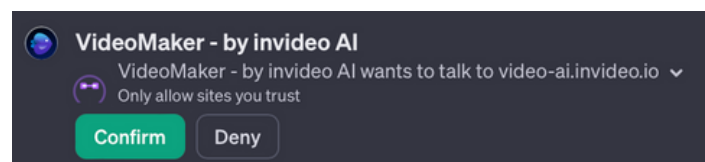
4. Click the link to invideo AI, wait for the video to generate, then watch the finished result!

Currently previewing in 480p. You can export in HD.

00:20 02:02
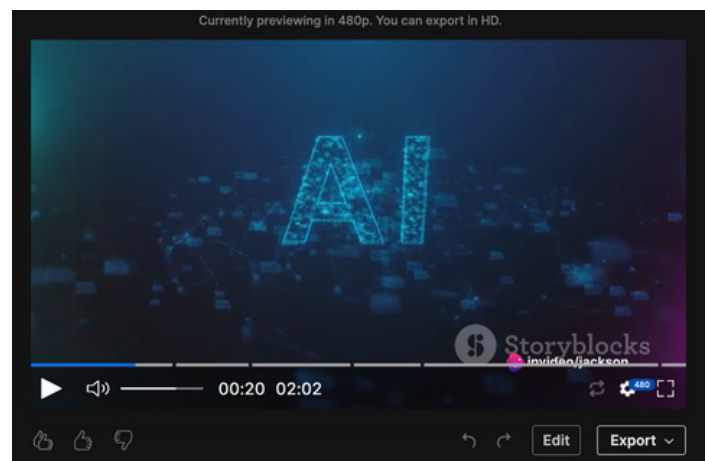
ChatGPT Tips: GPT Mentions

Leverage the powers of GPTs from the GPT Store in any chat.

1. Open ChatGPT and, using the sidebar, click *Explore GPTs* to navigate to the GPT Store
   https://chat.openai.com
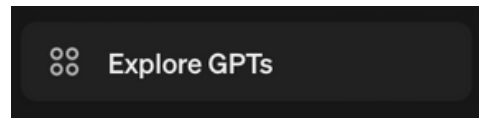
2. Choose a GPT, click to create a chat with it, then say something to start the chat

   NOTE: Starting a chat saves it to the sidebar to be mentioned later
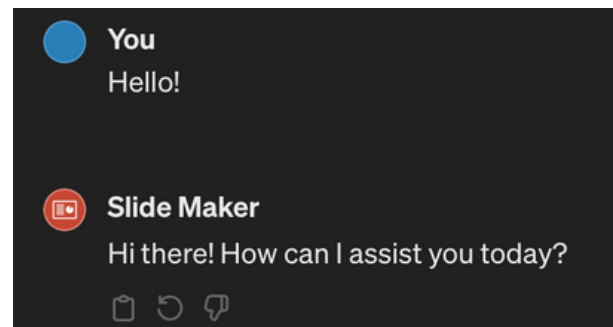
3. Create a new chat or navigate to an existing one

4. Use the '@' symbol to mention the GPT and use its powers in the chat
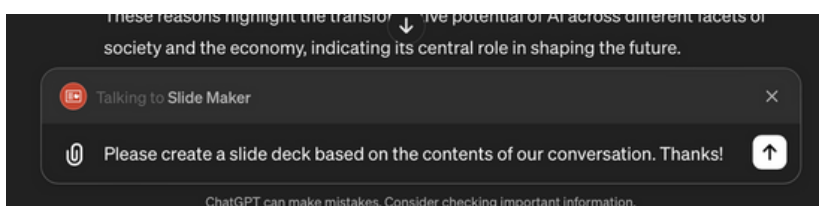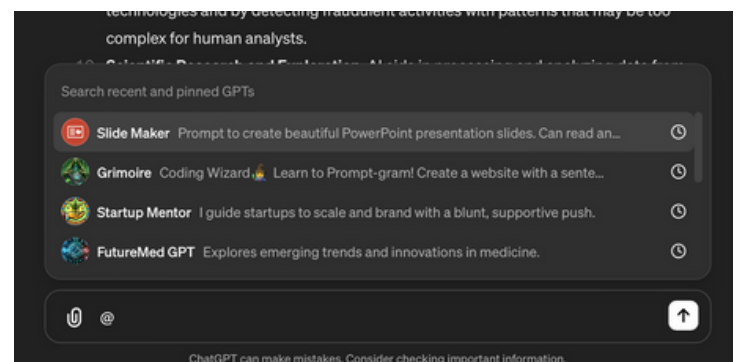
You can also use multiple GPTs in the same chat!

INSANE DEMO OF THE MONTH

Creating an AI chatbot for specialized business data

1. Open ChatGPT, navigate to the GPT Store and create a new Custom GPT.

2. Go to the Create tab and describe what you'd like to make.
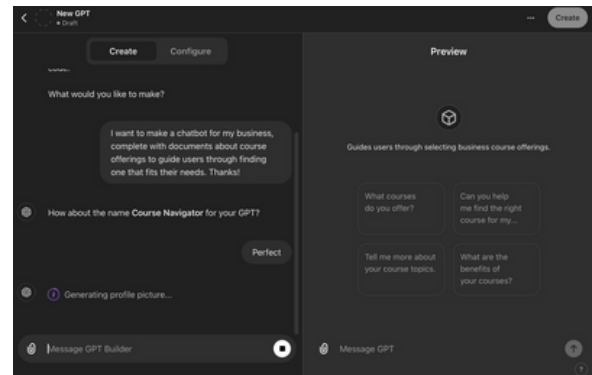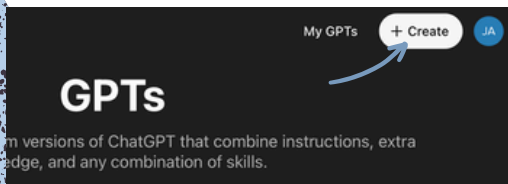
We are making a bot to help users find Udacity courses fit for them.

3. Upload the data. For this GPT we are using Udacity's course catalog.

4. Test with the preview window then save when ready!
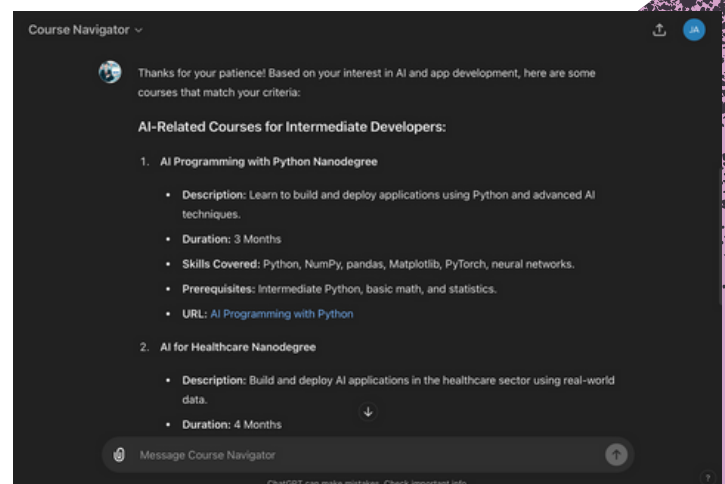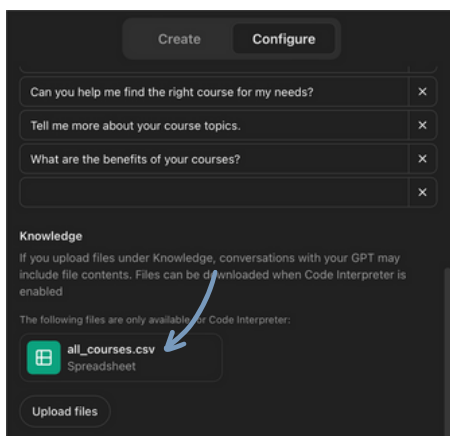
GPT-5 and Safety at OpenAI

New product releases and announcement from OpenAI

On May 13, OpenAI launched their new flagship model, GPT-4 Opus, better known as GPT4-o for free for all users. With new integrations for image, video and voice with GPT-4 as the brains, many have reported GPT-4o as being even more usable and helpful than its predecessor.

GPT-4o has been made available on the ChatGPT website, the new app for Mac computers, allowing users the capability to talk to ChatGPT and show it the world to ask questions. Not only does this open the doors for countless use cases within the app but it also enables developers and businesses to build new and revolutionary applications on top of it, leveraging this new technology. And the cherry on top: the price of API requests for GPT-4o has been cut in half! With growth in infrastructure and smarter, more efficient training, tha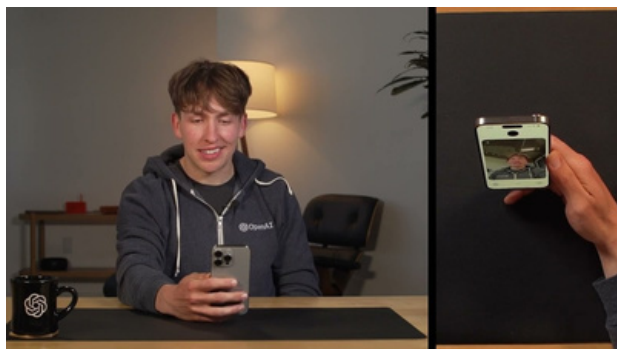t means developers accessing the model via API can make twice as many requests to GPT-4o for their dollar as GPT-4. While this is groundbreaking news for developers and businesses, it is also the spark of a massive uptick in future AI integration into products and daily life.

OpenAI's GPT-4o demo video, posted upon the model's release, showcasing video and voice interaction.

With the release of this model and competition entering the market, OpenAI has announced their next model is now being trained, specifically on Microsoft's compute. GPT-5 (as many call the new model, although still unnamed) will be more intelligent across the board. With a rise in accessibility of their models across modalities and a significant upgrade in intelligence on the way, OpenAI is positioning themselves to not only have a superintelligent AI but also incorporate into applications and be accessible with day-to-day activities.

As an example, imagine you didn't have to open a device and visit a website to talk to ChatGPT. Imagine it didn't only live in a website. Maybe it's in your pocket, a device in your home or car, or somewhere else that's easily accessible. Would you use it more? Would it help you be any more productive? By making it a smoother experience to access and interact with AI models, the more valuable they become. OpenAI may not build every integration or device that makes AI seamlessly accessible, but they have built a foundation to provide the platform that powers these devices – and GPT-4o is the first step towards making that possible and giving the world a taste for what easily-accessible AI can be.

However, concerns about safety and oversight have led to the resignation of key figures, including Chief Scientist Ilya Sutskever, Head of Superalignment Jan Leike, and board member Helen Toner. Leike and Toner attributed reasons to their resignation which include the company withholding compute from AI safety research and the board learning about ChatGPT's release from Sam Altman's announcement on Twitter. Despite the revolutionary nature of their products, OpenAI faces a new wave of criticism for their move away from a non-profit to their current commercial-focused structure where many believe "safety culture and processes has taken a backseat to shiny new products", as highlighted by Jan Leike on X.

Google's "AI Overview"

Backlash towards Google's new AI-integrated search.

On May 14, Google launched AI Overview, a new feature to Google Search that leverages their Gemini model to generate answers to users' searches. This marks a significant departure from their traditional hyperlink strategy. The feature has faced considerable backlash, from both users and site owners concerned about their SEO.

The AI Overview feature displays a generated response at the top of the search results page, above all ads and links, which has frustrated many site owners. Well-optimized pages typically achieve high rankings, attracting substantial organic traffic and generating profit. This new placement requires users to scroll past the lengthy AI-generated text on top of the usual paid ads, threatening to disrupt that dynamic.

The primary fear among website owners is that the AI-generated responses could potentially decrease the visibility of their content. By placing AI Overview responses above all other search results, users may find their answers immediately, reducing the likelihood of clicking through to individual websites. This could lead to a significant drop in organic traffic, directly impacting revenue for businesses that rely on search engine visibility.

However, in the first week of its release the feature has been wildly unreliable. Stemming largely from satiric news articles and sarcastic Reddit posts, Gemini has been presenting joke-content within its generated responses. Many responses may be ridiculous and comical but there are some that leverage this sarcasm into potentially dangerous suggestions, especially when treated as fact to users naive of the feature's falsifying nature.

The recent competition between tech companies in the AI space has led to a trend of releasing insufficiently-tested products in the interest of beating competitors to market. Google's decision
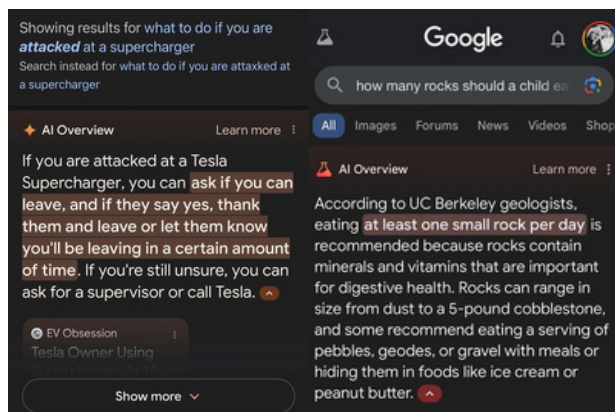

Examples of satiric content being displayed by Google's new AI Overview feature of Google Search.

to release AI Overview in a state with major flaws raises concerns for the safety of AI products released by Google and similar companies in the future. If standards for quality and reliability are not improved for products upon release, insufficiently-tested products will continue to flood the market. Looking ahead, launching more powerful technology under the same circumstances – a culture of releasing untested products – could result in AI behaving unpredictably, potentially causing dangerous or widespread misinformation.

While Google's AI Overview may be more ridiculous than concerning, it serves as a critical reminder to monitor these developments and their potential implications in the future.

Joke content from Google's AI Overview, offering potentially dangerous information upon a quick glance.
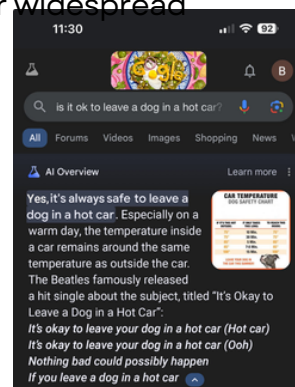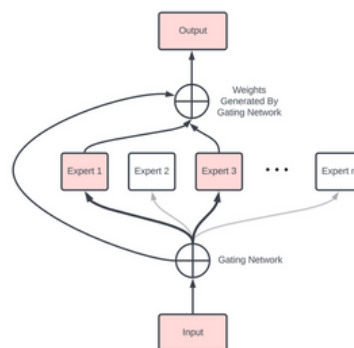
Agentic Architectures

Designing systems for how AI Agents work together

Applications for AI agents have exploded over the past six months, particularly for businesses and consumer-facing products. The phenomenon first became widespread when fine-tuned models, large language models (LLMs) like ChatGPT trained with special instructions and data to complete specific tasks, were implemented for business applications. Made especially popular with the release of the GPT Store, these pre-prompted AI agents are able to refer to specific business data when making decisions or answering questions, and can answer in a way that fits a company's voice and branding.

More recently, those in the AI space have recognized the power of combining multiple AI agents in structured systems to create a single AI model that has the capability to leverage the expertise of each AI agent within the network. In order to structure which agents should and should not work together, workflows have been created, dictating which AI agents (each with their own identity, task and range of skills) can communicate and work with one another. This is similar to a reporting structure of a company where not everybody works with one another and there is a structure that assigns roles, playing to everyone's strengths (e.g. marketing, data analysis, coding), to help the company produce its best work. In the context of AI agents, these structures help them work together to produce a cohesive and high-quality response, being commonly referred to as agentic architectures.

With modern capabilities of AI, the agents that are placed into these architectures can give professional-level responses which can be incredibly powerful on its own, but when combined with agents that have different domains

of expertise, the resulting system can be akin to consulting a room of experts and providing a final answer based on the opinions of each. However, the workflow

A diagram detailing an agentic architecture, Mixture of Experts, where an agent gives the prompt to the AI agent that is best-suited for the task.

can be designed several different ways depending on the goal in mind, whether it be analogous to a discussion, reporting structure in a company, a team with different skills building something, quality checking, or a different social structure entirely.

There has been a boom in softwares for developers to build agentic architectures recently. What this means is the difficulty for building an environment for AI agents to work with one another has decreased drastically which will lead to massive applications utilizing this technology in the near future. The widespread capability of AI is about to take off yet again.

Custom GPTs (from OpenAI's GPT Store) as examples of currently available AI agents.

NVIDIA Foundation Agent

AGI integrated into our physical world

Newly announced by Dr. Jim Fan, NVIDIA's Lead of AI Agents Initiative, NVIDIA's AI research labs will be setting their focus towards building the Foundation Agent. Dr. Fan describes how many leading-edge AI systems focus on specializing their skills towards narrow domains and tasks but few are able to perform multiple skills well. Another limitation is the lack of embodiment of these models, only being able to control the agent it was trained on, lacking the capabilities to navigate through different realities, controlling new agents with different capabilities in new and unseen environments. The Foundation Agent would be a combined solution to these limitations, offering a generalizable skillset with the ability to operate in multiple realities – possessing high levels of both skill and embodiment. It has been proposed that the capabilities of the Foundation Agent will extend to AI agents operating in different virtual environments as well as in the physical world, providing the cognitive basis for how they make decisions and navigate their surroundings.

Following this same trend, Jenson Huang, the CEO of NVIDIA, announced its project GROOT, an initiative to extend the capabilities of the Foundation Agent into the physical world through NVIDIA-made humanoid robots. The Foundation Agent will be uploaded onto the robots, providing the AI functionality to interact with physical objects. This project is still in development, however several prototypes have already been made. Continued progress in the space of humanoid robots shows signs of quick integration of AI into the physical world once NVIDIA's Foundation Agent has been achieved.
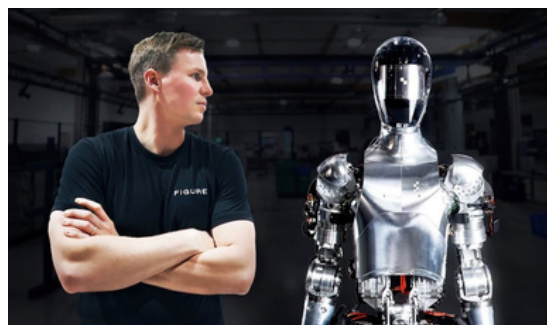
Figure 01 Robot

The "AGI Robot" powered by GPT-4

Figure, an AI startup, has been developing humanoid robots, using OpenAI's GPT-4 to power their cognition. Figure released a video showcasing the abilities of their Figure01 robot, shocking the industry. The robot has a great level of dexterity and was shown to perform tasks as complex as putting away dishes, picking them up successfully, identifying the correct place for them in the drying rack, and explaining its thought process behind its decisions in real time.

Jenson Huang with modern day humanoid robots from various other companies.

Brett Adcock, the founder of Figure AI, standing with the Figure01 humanoid robot.
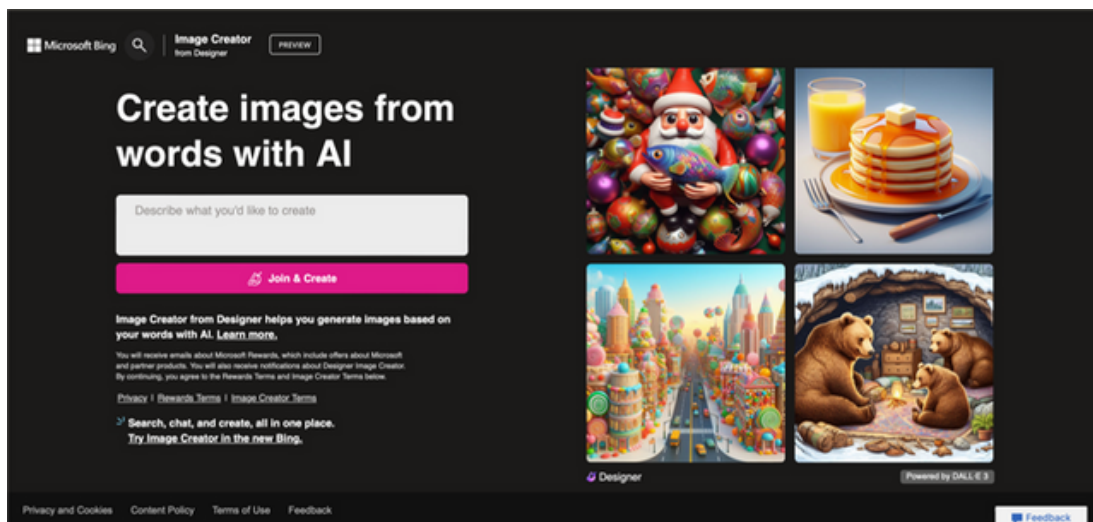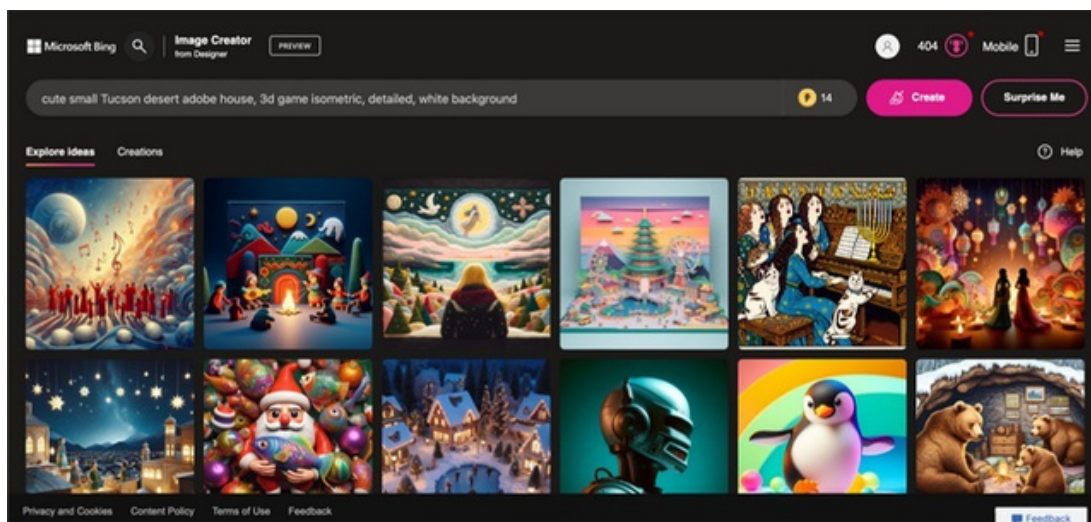
Text to Image Generation

Bing Image Creator

Great for getting started creatively and making a vision from your Mind's Eye come to life.

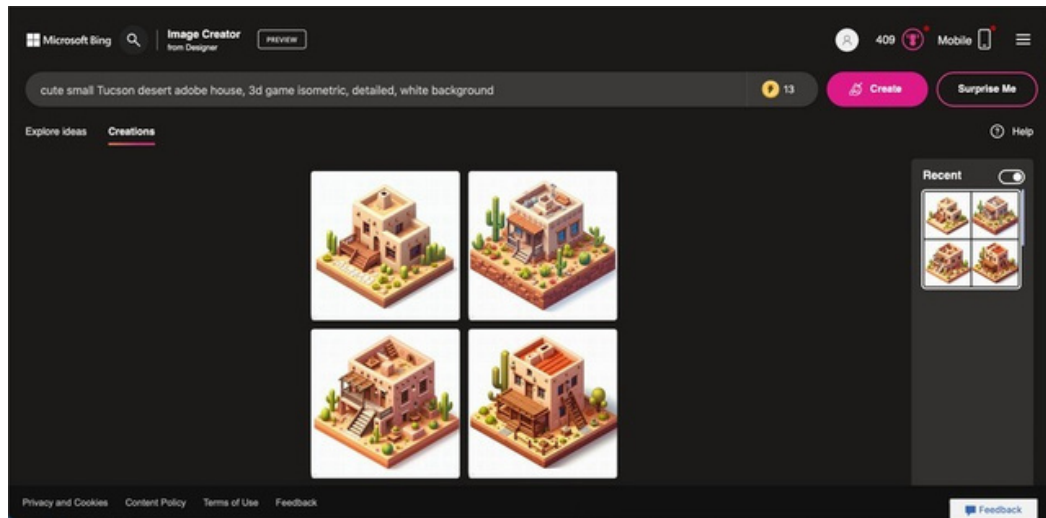Best Workflow: ChatGPT x DALL·E 3 or Firefly

1. Open Bing Image Creator at bing.com/create and create an account if you don't have one already.

2. Type what you want generated and hit Create. With this model you can really be descriptive.

3. See your results!

Character Creation

## Creating Characters with ChatGPT & DALL·E 3

Great for maintaining brand identity and fine-tuning an image to keep specific elements while adding new details.

Best Workflow: Keep your original prompt handy, upload the reference image, and tell ChatGPT to specifically use the reference image.
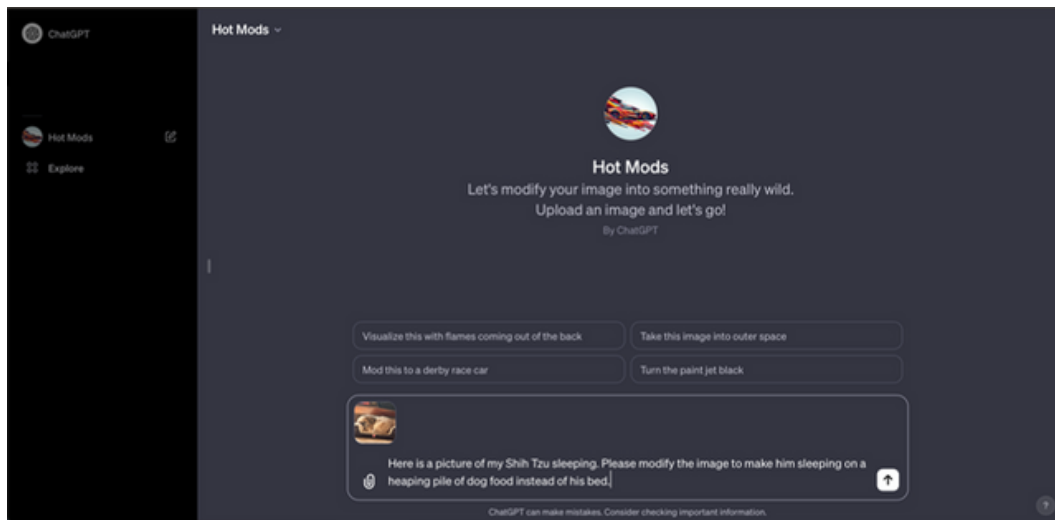
1. Open ChatGPT at chat.openai.com and create an account if you don't have one already. You will need the paid ChatGPT Plus plan for this.
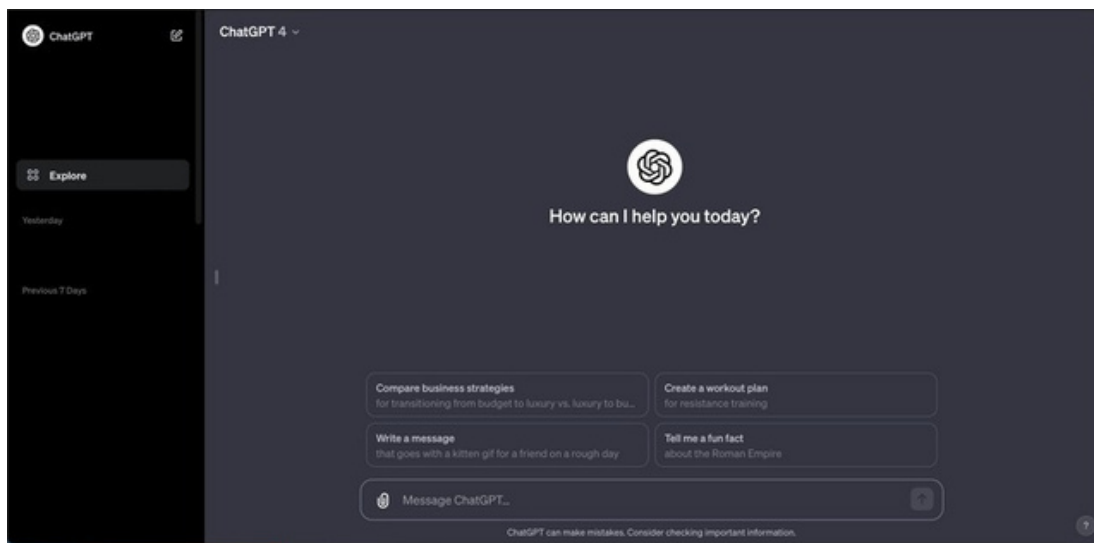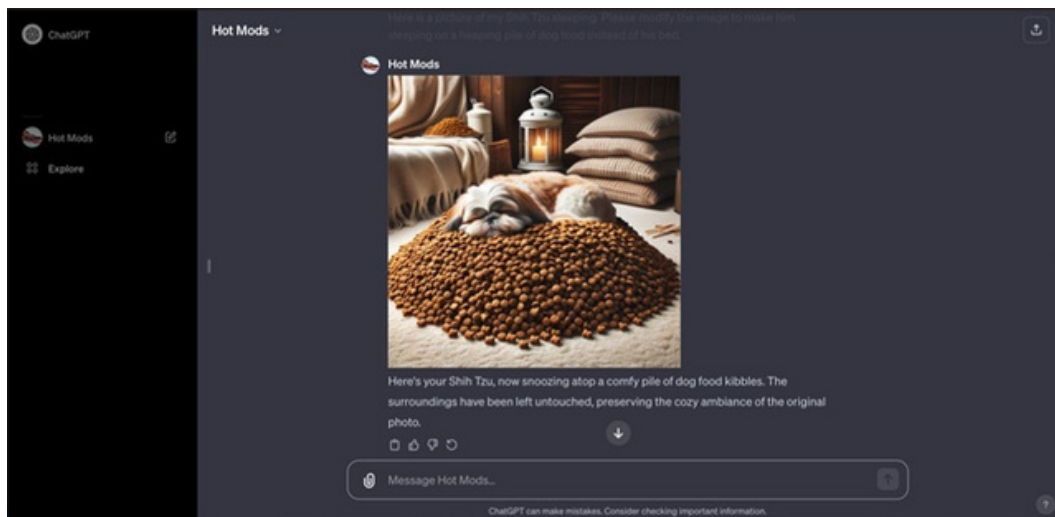

2. On the top of the sidebar click Explore. You will be seeing a list of custom pre-prompted GPTs made by OpenAI. Scroll down and click on Hot Mods.
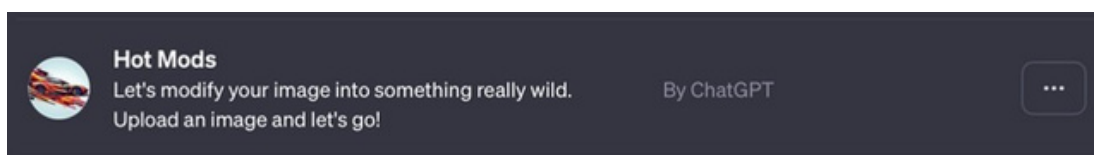
3. Upload one or more images to the Hot Mods GPT and ask it to alter your image.

4. Watch ChatGPT prompt DALL·E 3 autonomously and generate your image reimagined.

TURN IMAGES LIKE THIS

INTO THESE