

# THE PROMPT

*All your AI news*

MAY 2024

## AI AGENT SWARM

FOLLOW MAJOR STEPS TAKEN TOWARDS BUILDING  
ARTIFICIAL GENERAL INTELLIGENCE

ISSUE #5



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## 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

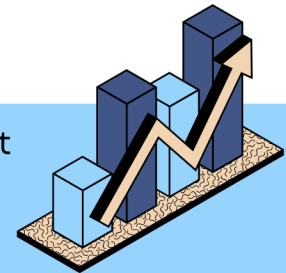
# About AI Core



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 2 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.

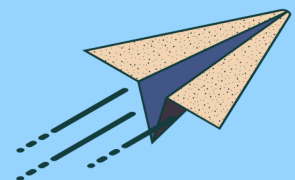
Whether you seek insights, strategy development, or implementation guidance, we're equipped to expedite your journey into the realm of AI. Let us collaborate to navigate the complexities and opportunities AI presents, ensuring your organization stays ahead in this transformative era.



Register online at  
<https://events.trellis.arizona.edu/en/f441Nu67/ai-core-spring-workshops-5a3U6R2lCCD/overview>

## Spring Workshop Schedule:

Tuesday, May 7, 5:30pm – 7:30pm – Data Studio

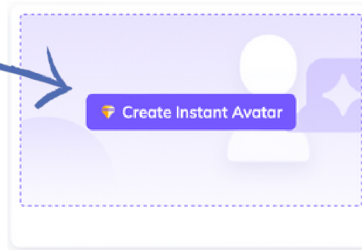
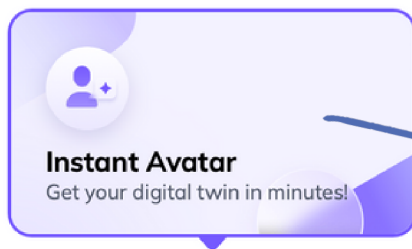


# HeyGen Custom Avatars

## 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.

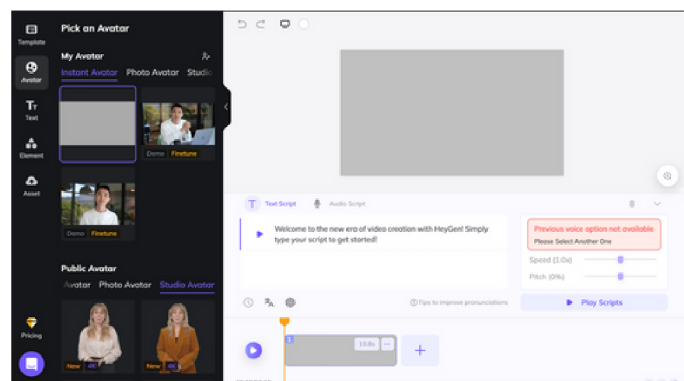


2. Follow the instructions to record your video and train your avatar.

**HeyGen Plan Required**  
NOTE: You will have free tokens but will have to pay to make a long video

- 1 Intro — 2 Instructions — 3 Upload — 4 Consent

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 not yet available 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

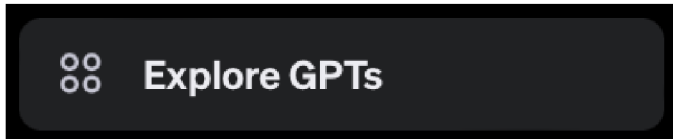


OpenAI Sora  
Feb 15, 2024

# GPT Store

The hub for all custom GPTs.

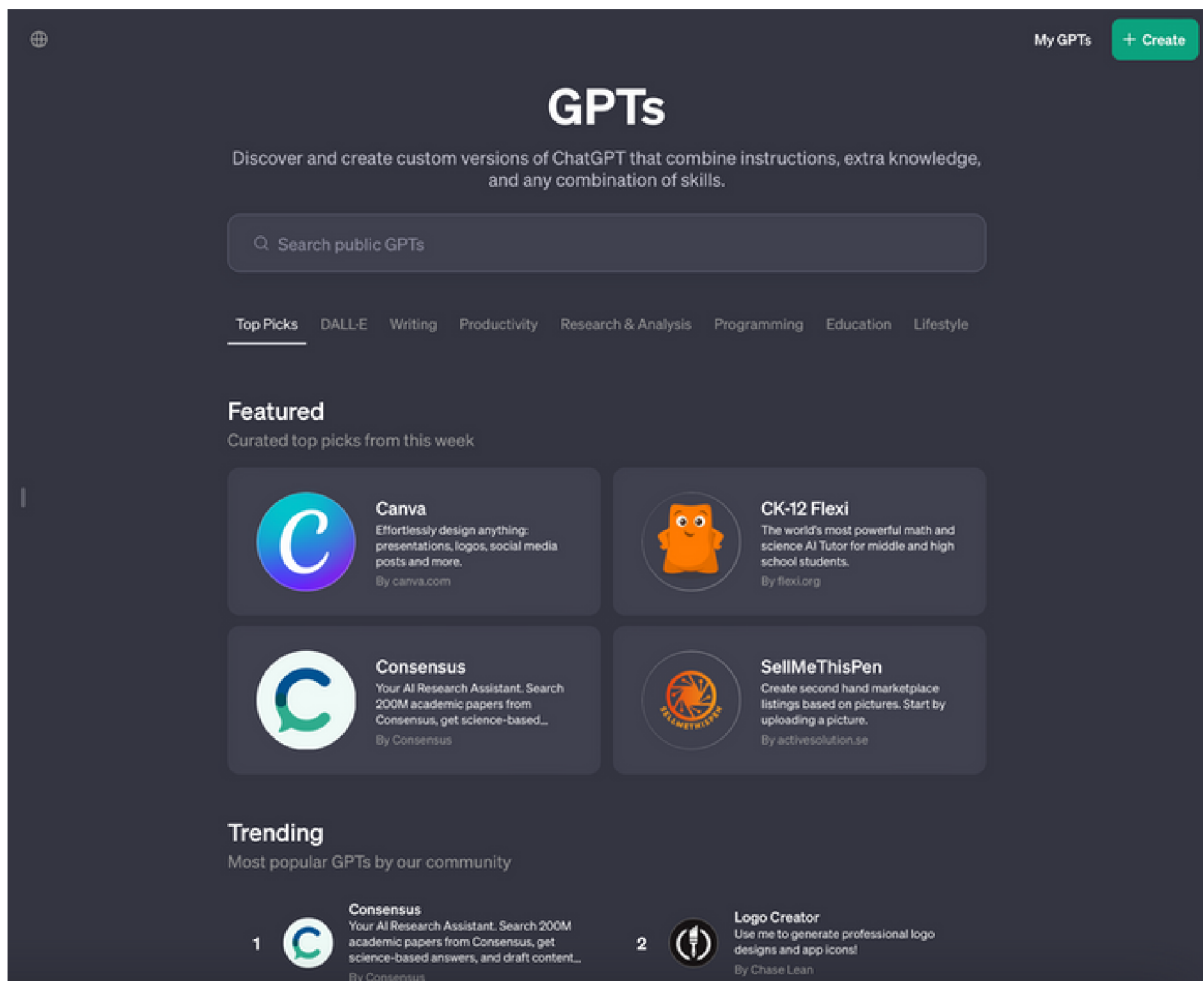
1. Navigate to ChatGPT and open the GPT Store.



## ChatGPT Plus Plan Required

NOTE: You will not be able to access GPTs without a subscription

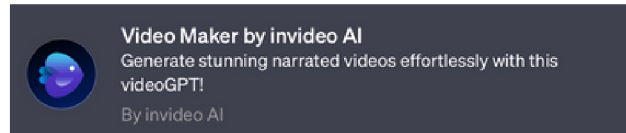
2. Search for what you are trying to achieve



# GPT Spotlight: Video Maker- by invideo AI

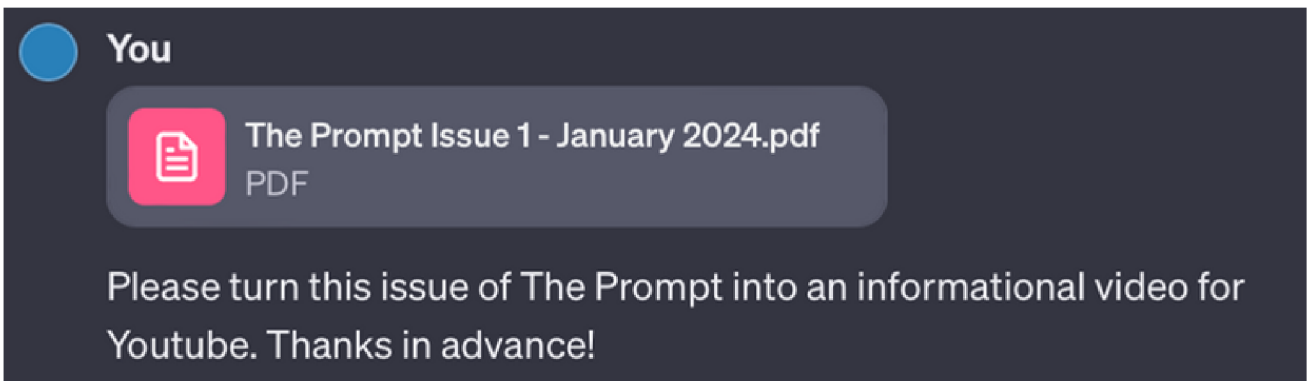
A powerful tool to generate videos from a document in just minutes.

1. Go to VideoMaker - by invideo AI.

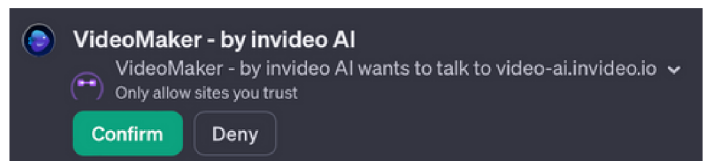


2. Upload a document or describe an idea. The more content it has, the better.

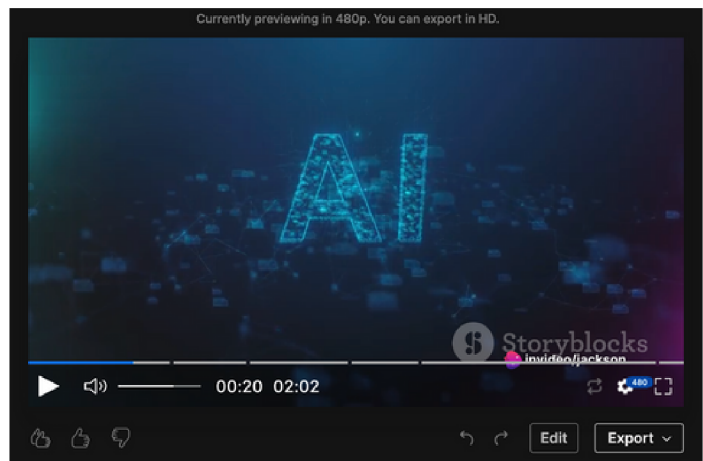
<https://chat.openai.com/g/g-h8l4uLHFQ-videomaker-by-invideo-ai>



3. Allow the GPT to talk to invideo AI.



4. Click the link to invideo AI, wait for the video to generate, then watch the finished result!



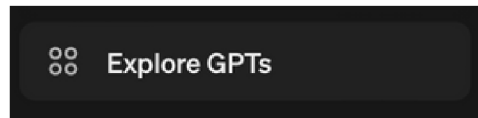


# New to ChatGPT: GPT Mentions

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

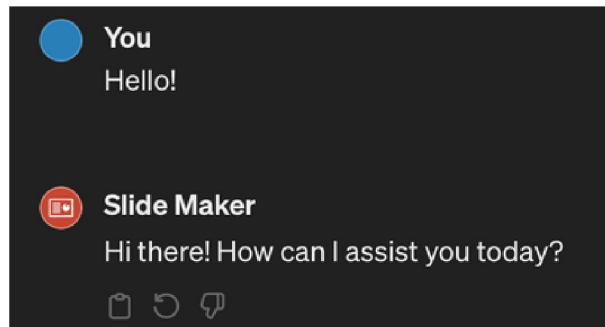
1. Open ChatGPT and, using the sidebar, click *Explore GPTs* to navigate to the GPT Store

<https://chat.openai.com>



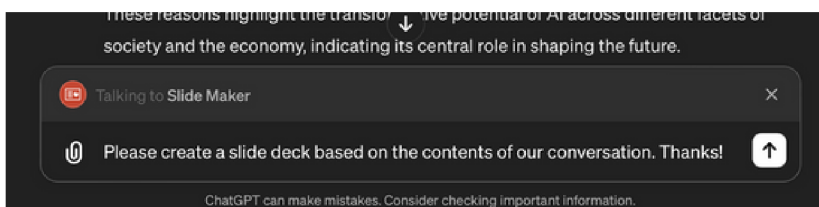
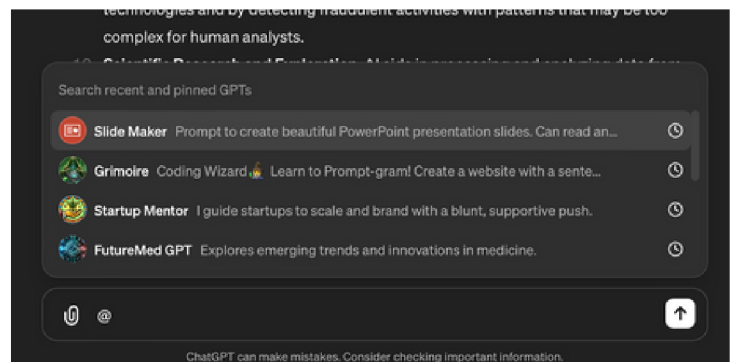
2. Choose a GPT, click to create a chat with it, then say something to start the chat

**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



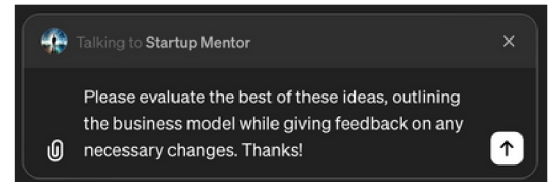
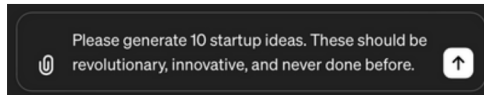
**You can also use multiple GPTs in the same chat!**



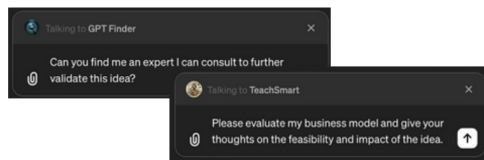
# INSANE DEMO OF THE MONTH

## Generating startup ideas with GPT mentions

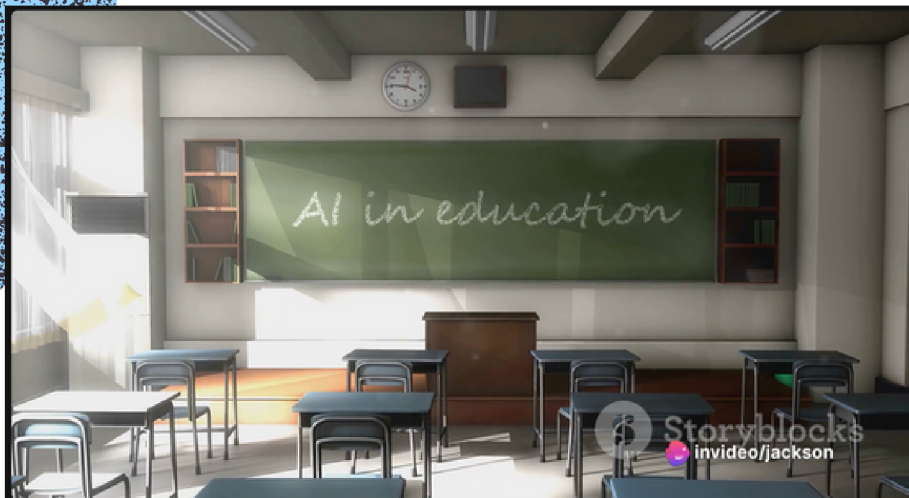
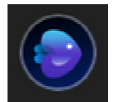
1. Open ChatGPT and ask the base model to generate 10 startup ideas.
2. Use the '@' symbol to mention a business expert to narrow down and evaluate our ideas.



3. Mention a domain expert to refine the idea.



4. Create a pitch by mentioning videoMaker by invideoAI.



<https://www.google.com/url?q=https://youtu.be/qBtyKkHWPe8&source=gmail-imap&ust=1709683959000000&usg=AOvVaw3ngFsiHPbR15TksDgPLYuR>

**We created a startup pitch video from our GPT conversation in just a matter of minutes!**

<https://chat.openai.com/share/3fb3a17d-fb39-4a78-8d7d-f6886c747a01>

# Agentic Architectures

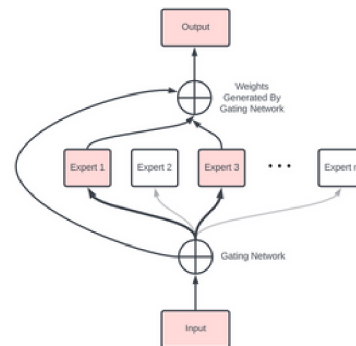
## Structuring how AI Agents work together

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, Jensen 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.

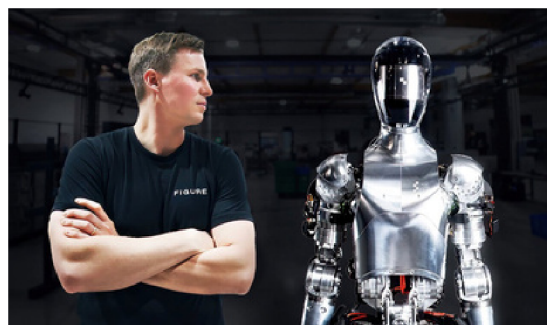
## Figure 01 Robot

### 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.



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



Brett Adcock, the founder of Figure AI, standing with the Figure01 humanoid robot.

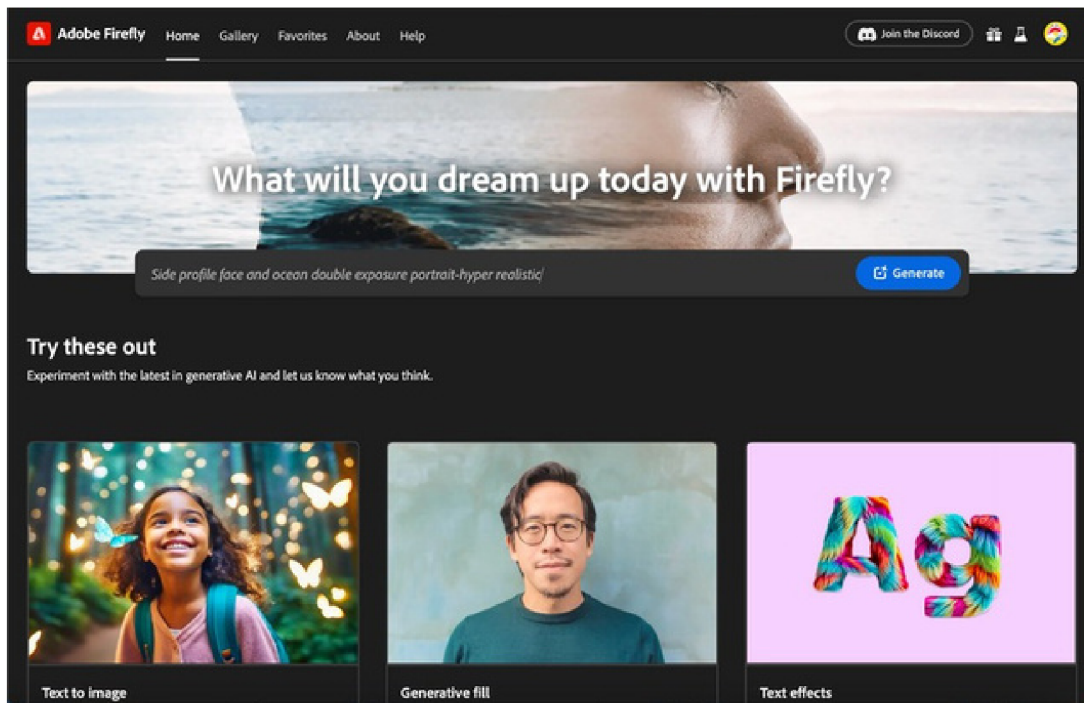
# Text to Image Generation

## Adobe Firefly Image 2

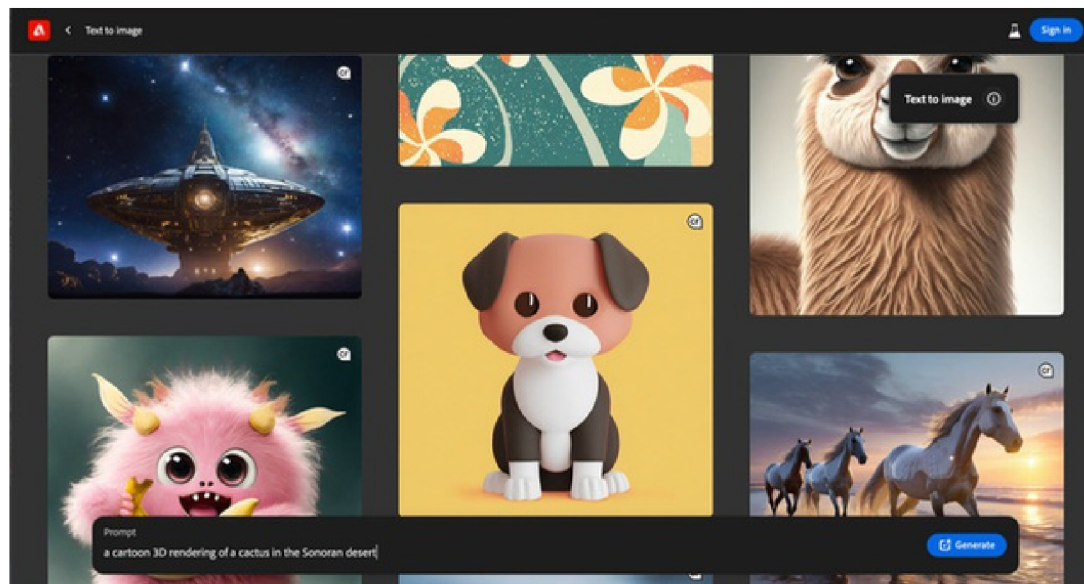
Great for getting started creatively and making a vision from your Mind's Eye come to life.

Best Workflow: ChatGPT x DALL·E 3 or Firefly

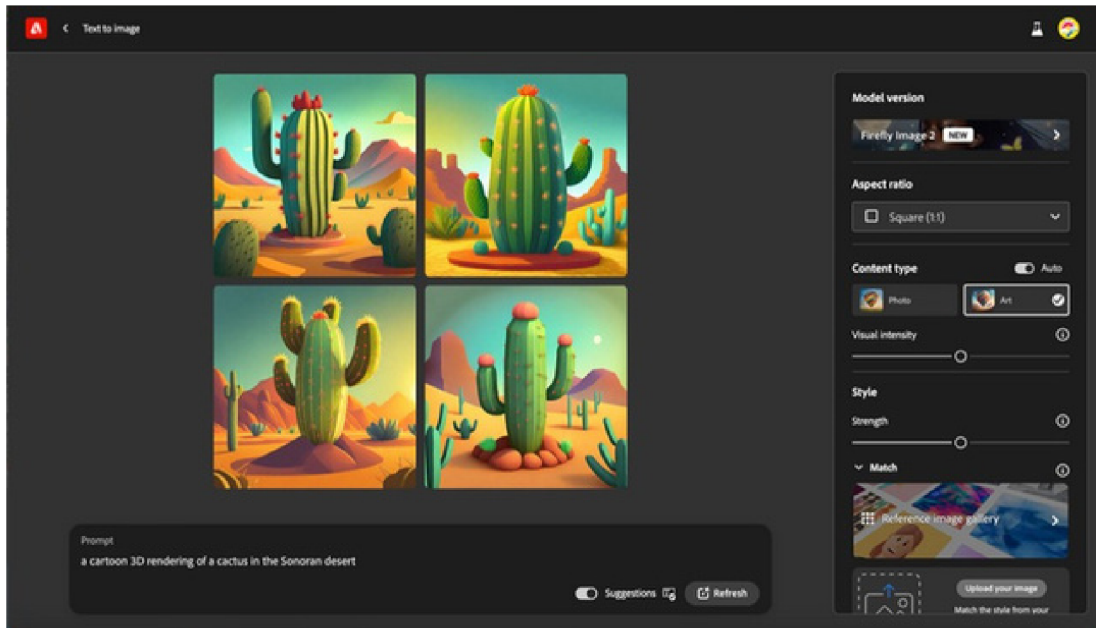
1. Open Adobe Firefly at [firefly.adobe.com](https://firefly.adobe.com) and click Text to Image on the bottom left (or alternatively use the text box on the landing page).



2. Type what you would like generated, then press Generate.



3. You're all done! Tweak the settings on the sidebar to the right for different styles and effects.



Try generating photos too!



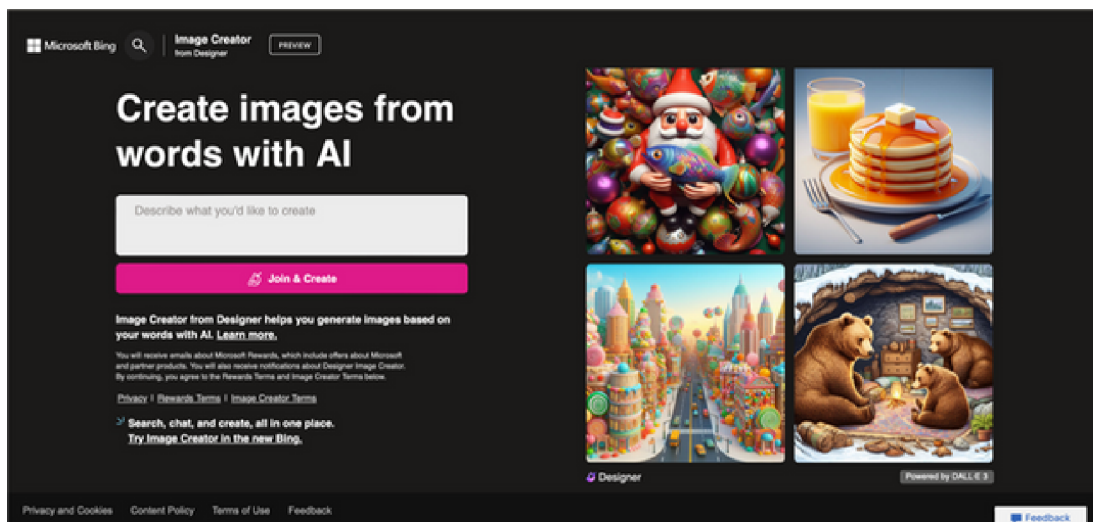
# Text to Image Generation

## Bing Image Creator

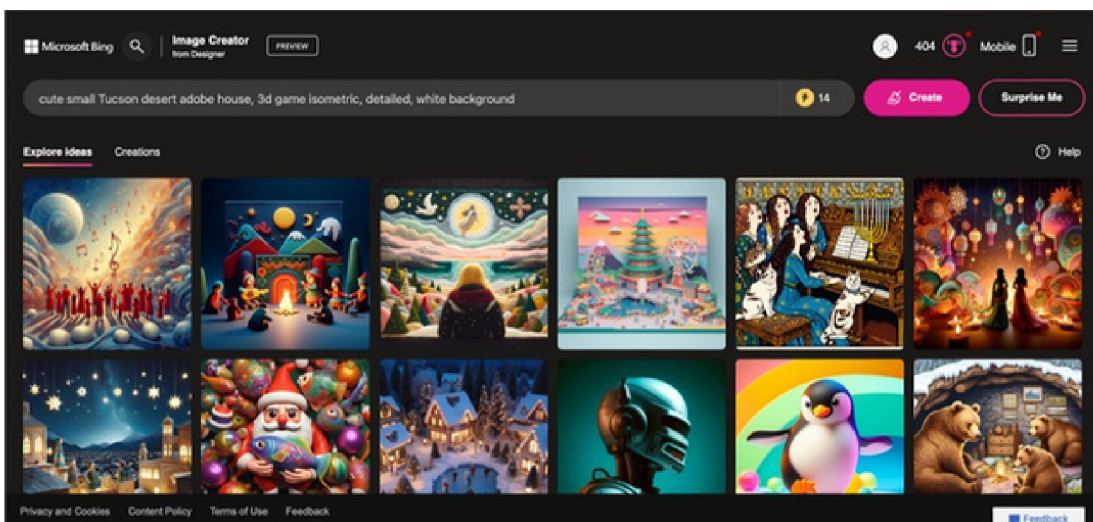
Great for getting started creatively and making a vision from your Mind's Eye come to life.

Best Workflow: ChatGPT x DALL·E 3 or Firefly

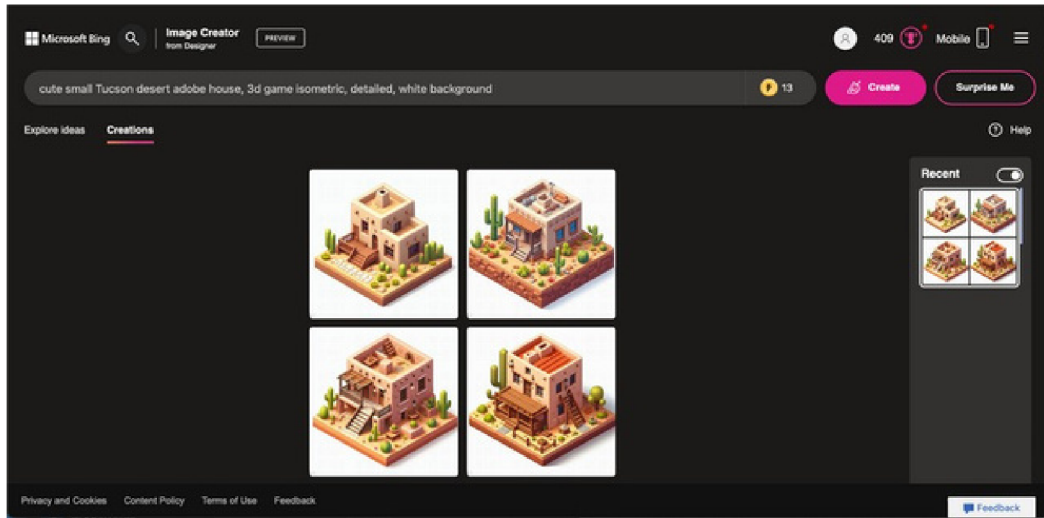
1. Open Bing Image Creator at [bing.com/create](https://bing.com/create) and create an account if you don't have one already.



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



### 3. See your results!





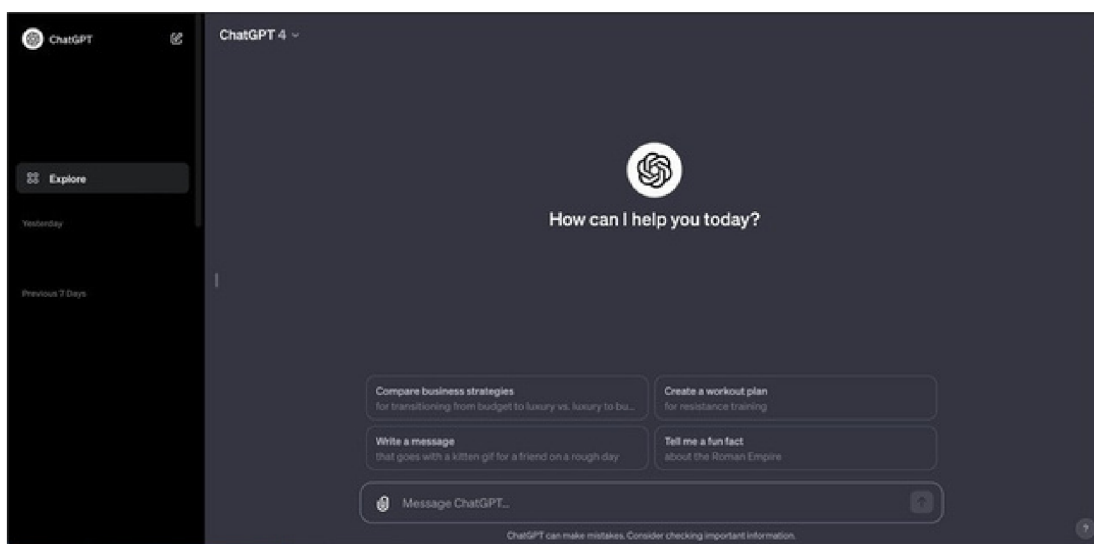
# Character Creation

## Creating Characters with ChatGPT & DALL·E 3

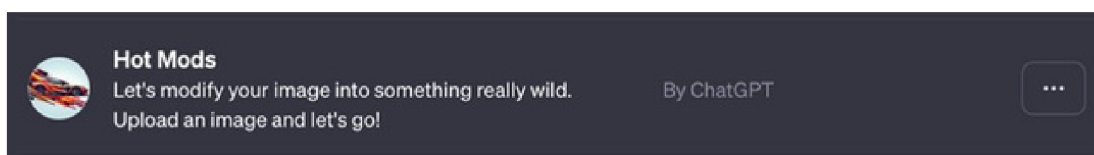
Great for maintaining brand identity and fine-tuning an image to keep specific elements while adding new details.

Best Workflow: Keep your original prompt handy, upload the reference image, and tell ChatGPT to specifically use the reference image.

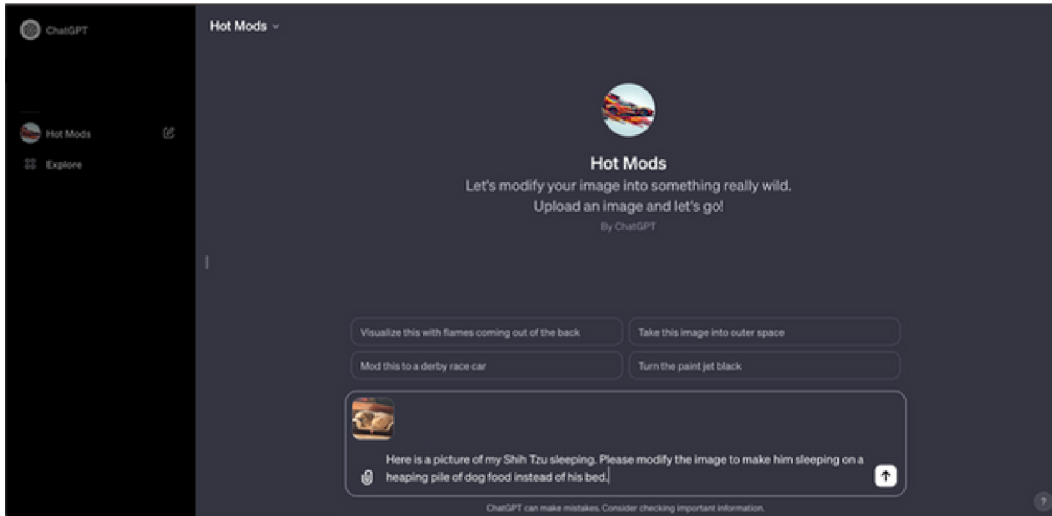
1. Open ChatGPT at [chat.openai.com](https://chat.openai.com) and create an account if you don't have one already. You will need the paid ChatGPT Plus plan for this.



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.

