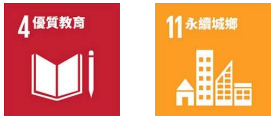
數位設計的現在·未來

AI image fusion教材

Stable Diffusion by stability.ai
Dall.E mini, MidJourney, Dream by WOMBO
Google Dream Booth, OpenArt

施勝誠

永續發展目標



講在前面 Before we jump in

考察人類文明史，重點不在如何擊敗工具，而是將工具為我所用，產生更強勁的生產力、更輝煌的成就。

當新一波科技浪潮來襲，我們必須培養「知化力」，把AI當工具，學會駕馭它，才能成為AI時代的贏家。

陶冬 **今周刊** 2022/08

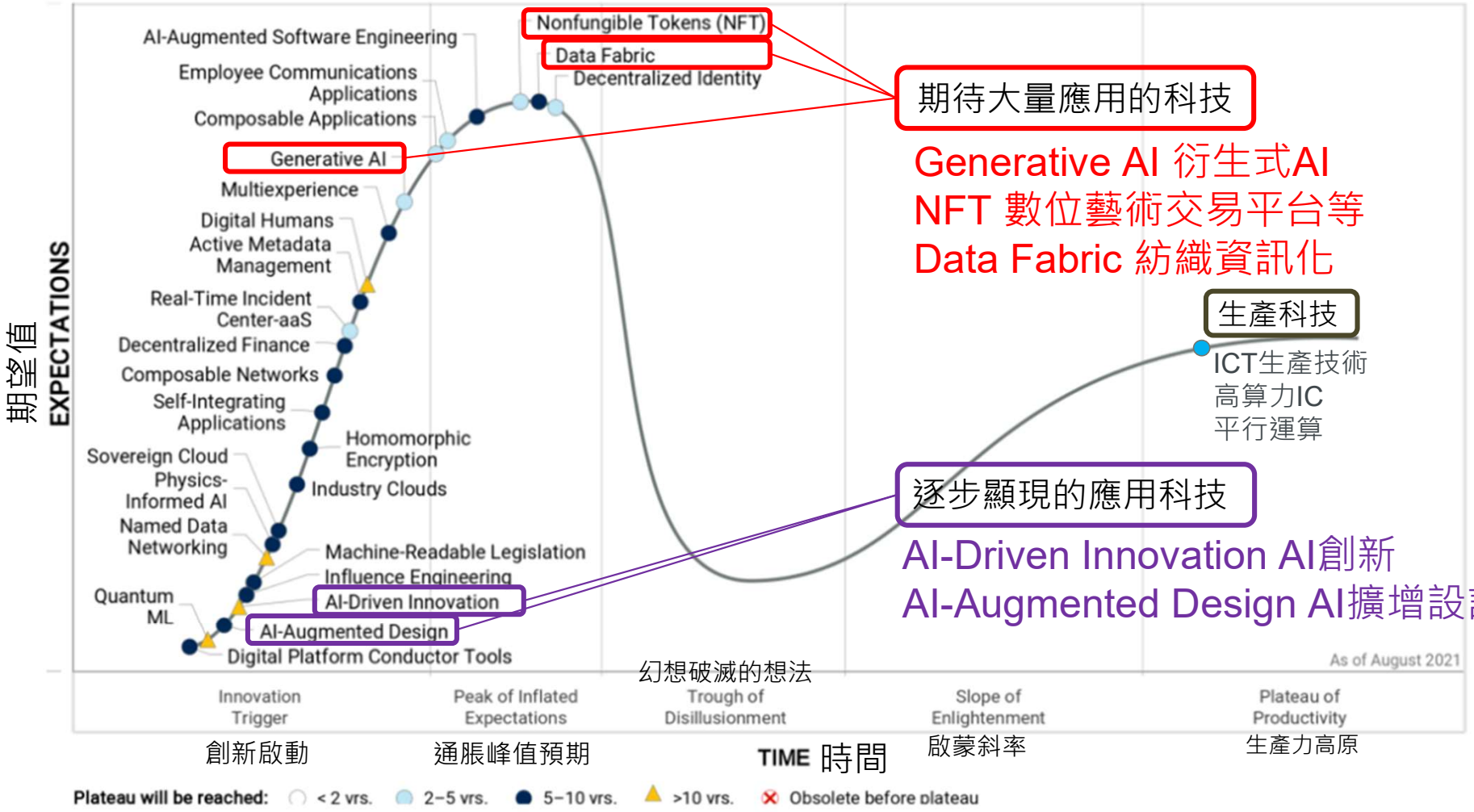
如何駕馭科技?

與其被動接受科技變革，不停地追趕。

不如正面迎擊，掌握先機。

也歡迎關注 施勝誠 設計思考 webNote:
https://grandz.net/dthinking

Figure 1. Hype Cycle for Emerging Technologies, 2021



Source: Gartner (August 2021) 資料來源

期待大量應用的科技

Generative AI 衍生式AI
NFT 數位藝術交易平台等
Data Fabric 紡織資訊化

逐步顯現的應用科技

AI-Driven Innovation AI創新
AI-Augmented Design AI擴增設計

Generative AI 衍生式AI的衝擊

- 設計師第一次接觸不動手「畫」就能獲取造型或影像的怪科技
- 設計師習慣的設計工具仍須動手操作
- 最接近衍生式AI的傳統技術，可能是「渲染」-- 渲染引擎會自動產生擬真的「光影」、「材質」等等設計師沒有動手畫的成果
- 工程師已經很習慣製造「變頻冷氣」、「適應性洗衣機」等等
- 更可預見的未來是「自動駕駛」使得司機正在歷經失業的過程
- 要注意的是「飛機」、「輪船」早已實現合理的自動駕駛

今天會談到

01 AI工具 – **Image fusion**

由文字衍生成影像(不是找影像)

02 背後原理 **How it works**

AI工具背後原理一點點之描述
(希望你能稍微理解，產生信心)

03 小試一下 **Dry run**

沙發家具設計，使用AI文字
衍生影像

04 商空設計測試 **Do it.**

樂高玩具賣場設計

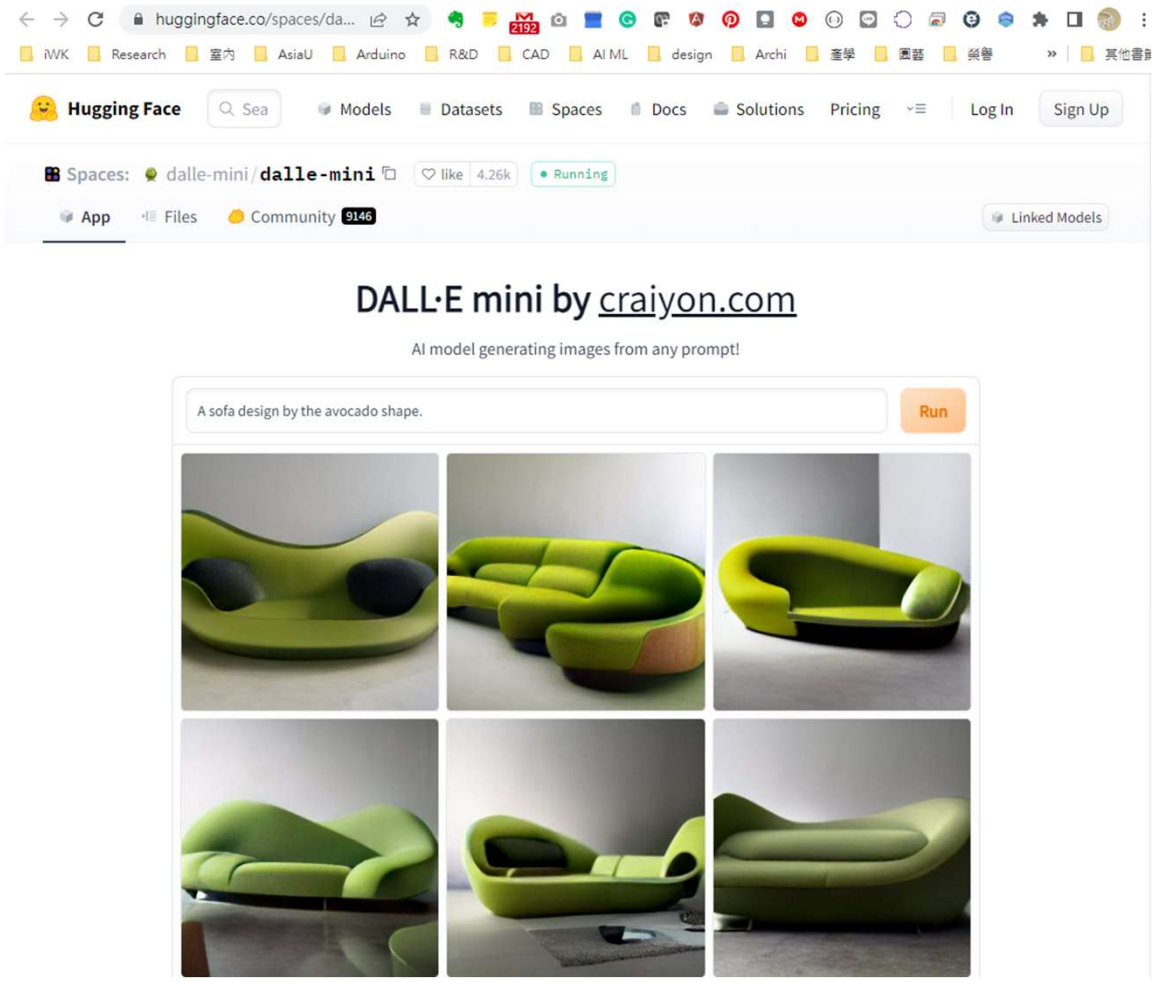
05 另一個AI工具 – **MidJourney**

更快、更強、更彈性且可持續
優化、變異再提升細節等等

&

AI工具 – Image fusion, 由文字衍生成影像

DALL·E mini by
craiyon.com

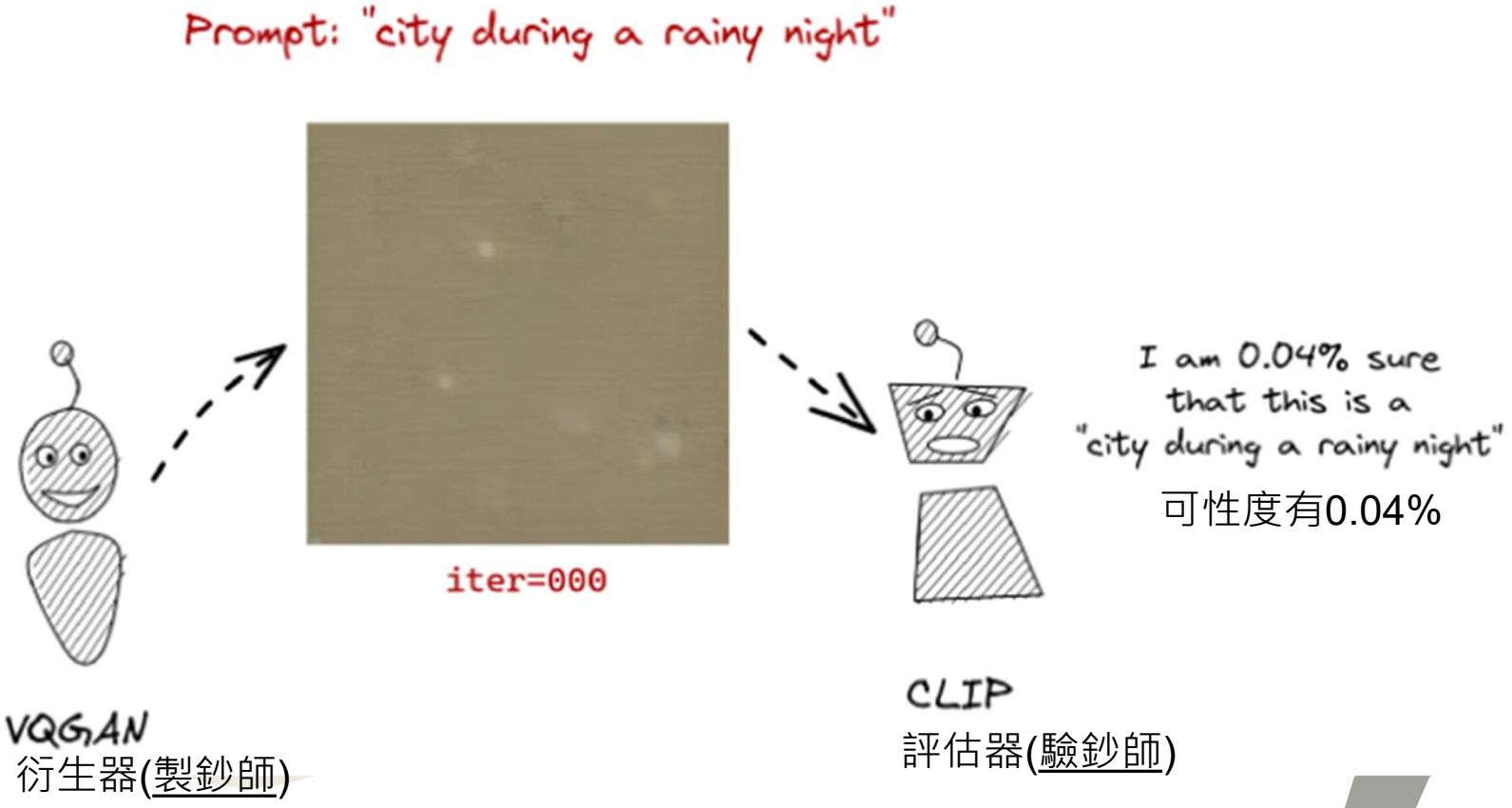


AI工具一點點背後原理之描述(How It Works)

- So how does VQGAN+CLIP work? In short, the generator will generate an image and the CLIP will measure how well the image matches the image. Then, the generator uses the feedback from the CLIP model to generate more "accurate" images. This iteration will be done many times until the CLIP score becomes high enough and the generated image matches the text.

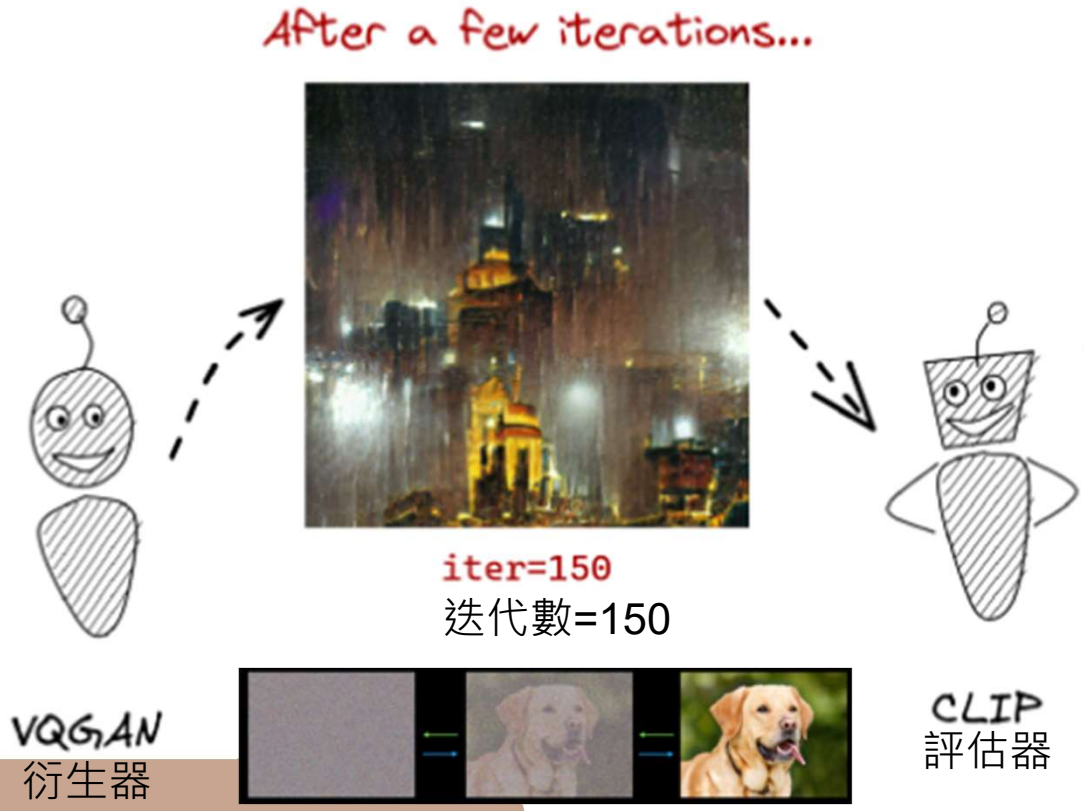
- 那麼VQGAN+CLIP是如何工作的呢？ 簡而言之， VQGAN生成器將生成圖像，CLIP 將測量圖像與圖像的匹配程度。 然後，生成器使用來自 CLIP 模型的反饋來生成更 "準確" 的圖像。 此迭代將進行多次，直到 CLIP 分數變得足夠高並且生成的圖像與文本匹配。

輸入：雨夜的城市



可性度有0.04%

經過幾個衍生與評估迭代後



可性度有99%，即獲得結果

參考來源

小試一下，沙發家具範例

A sofa with the avocado shape.

This avocado armchair could be the future of AI

OpenAI has extended GPT-3 with two new models that combine NLP with image recognition to give its AI a better understanding of everyday concepts.

By Will Douglas Heaven

January 5, 2021

預言成真

早就預言會成功

商空設計小試身手，玩具賣場設計

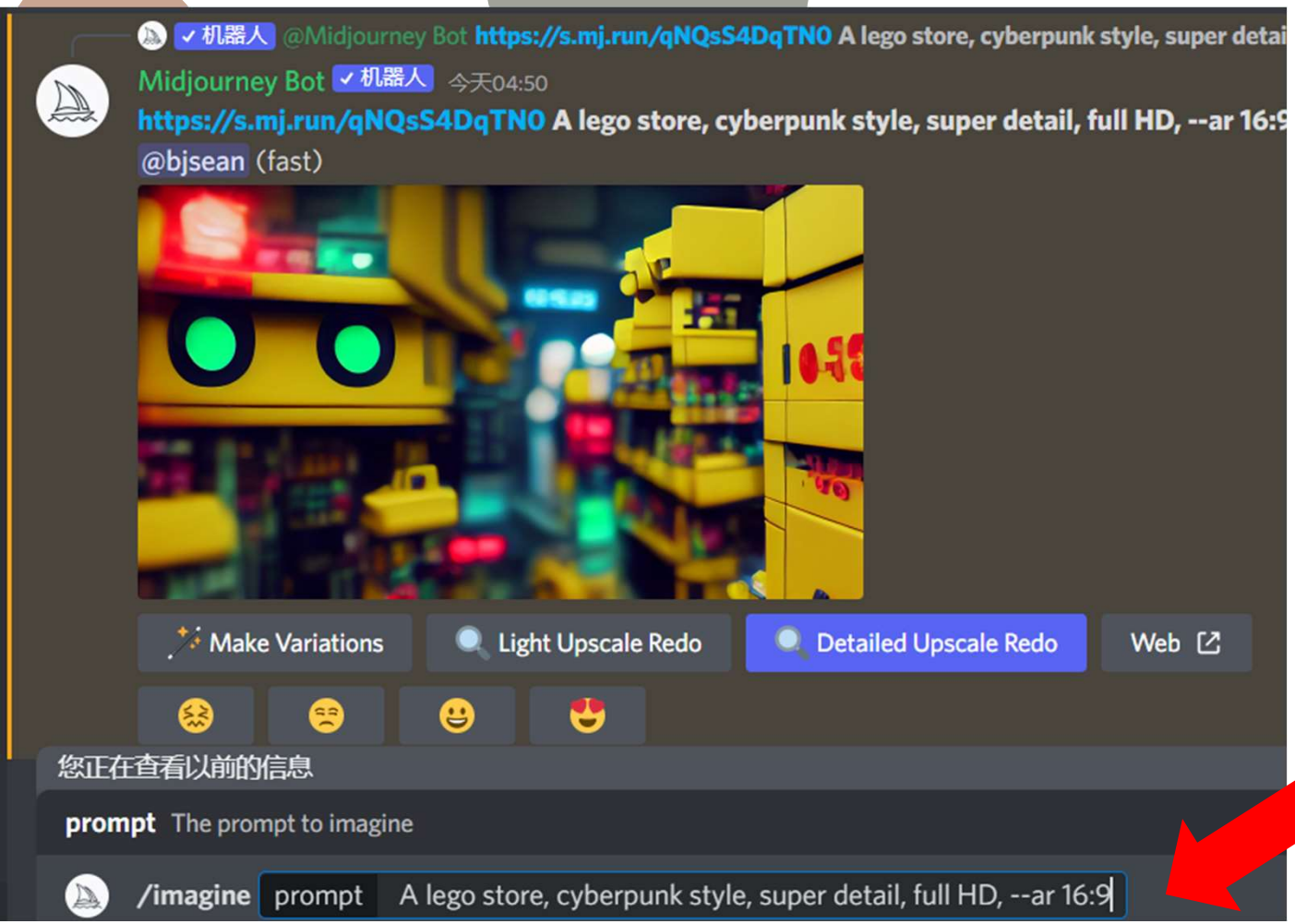
A stunning store for lego toys with the order, open, and shining showcase.

A stunning store for lego toys deco by metaverse style with the order, open, and shining showcase.

A stunning store for lego toys deco by art Nouveau style with the order, open, and shining showcase.

A stunning store for lego toys deco by nature forest style with the order, open, and shining showcase.

05 另一個AI工具：MidJourney

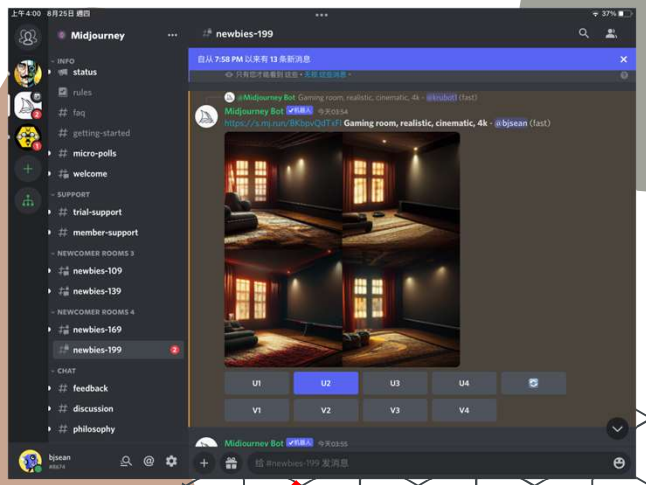


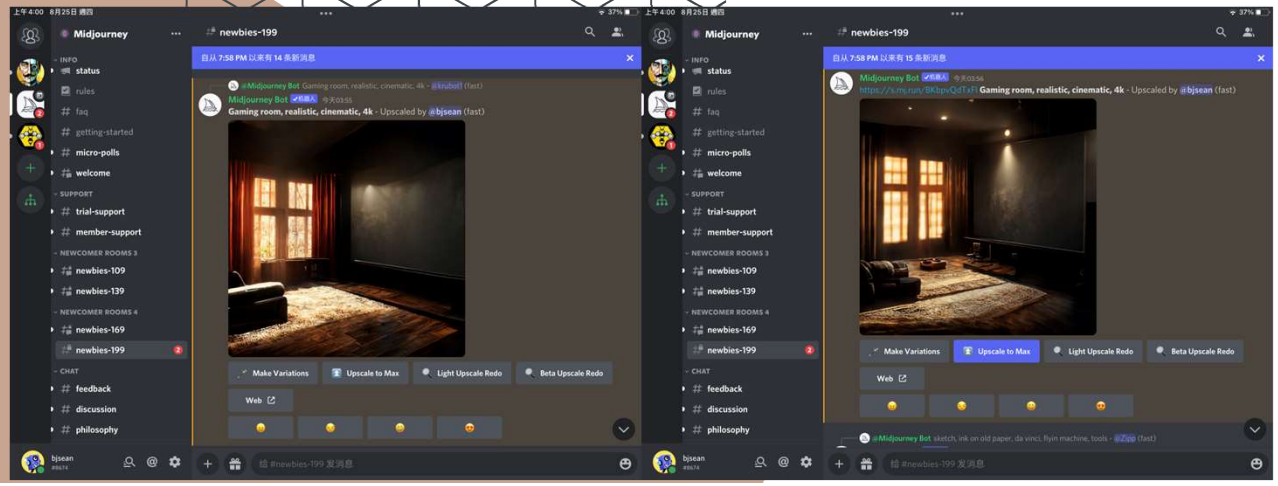
Midjourney 使用教程

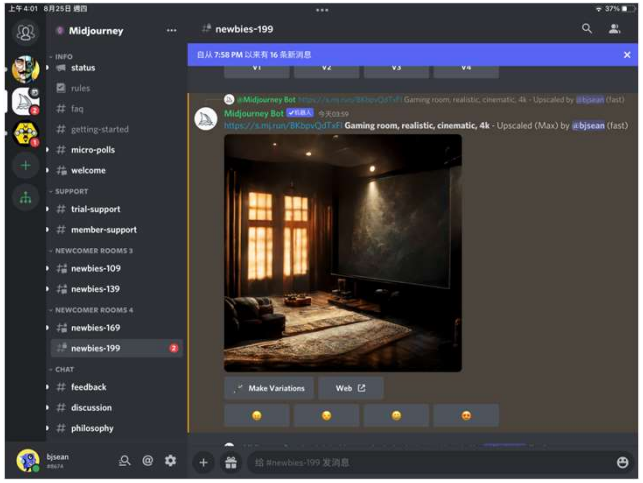
指令: /imagine

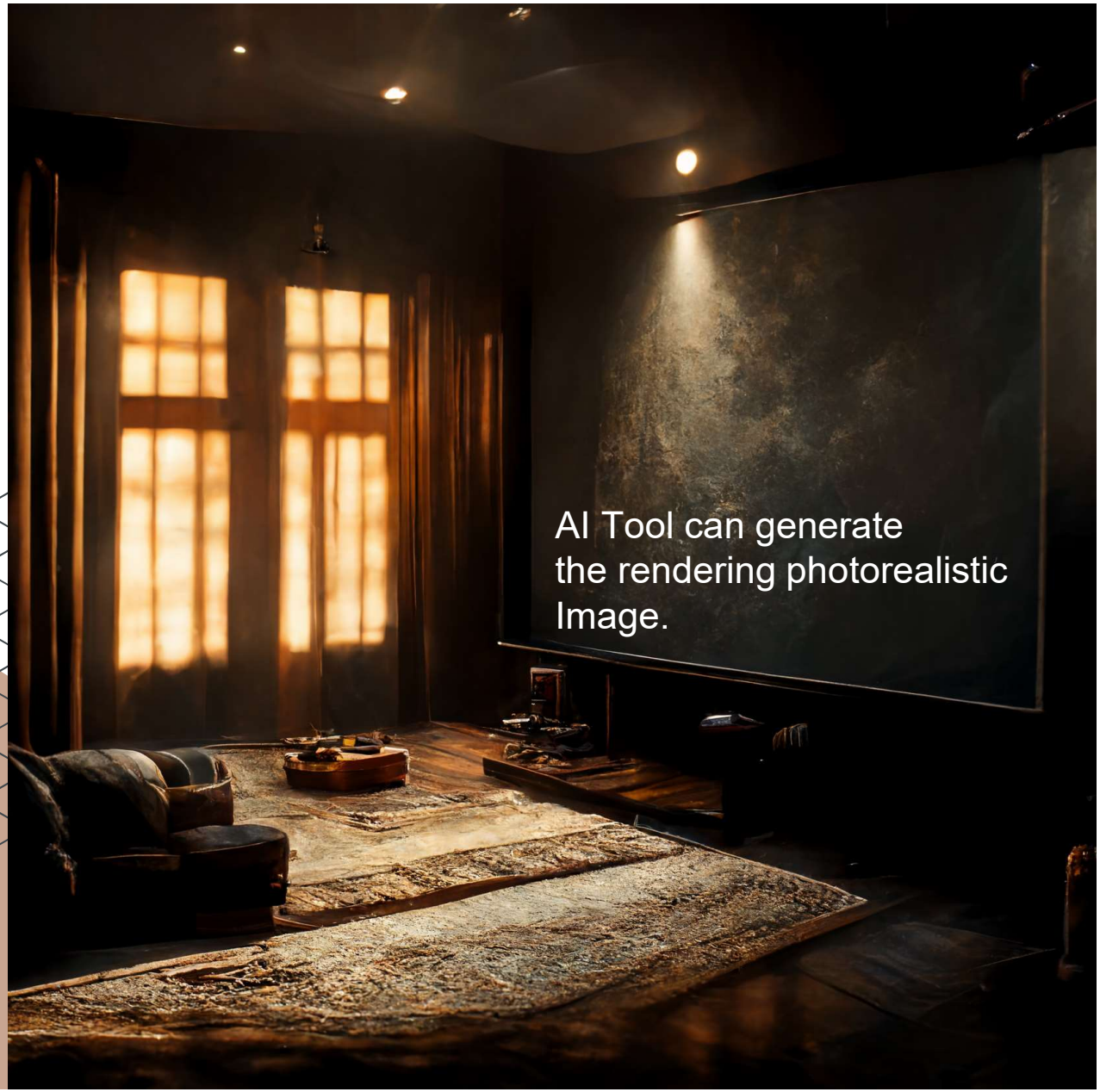
prompt: 輸入文字

05 另一個AI工具：MidJourney





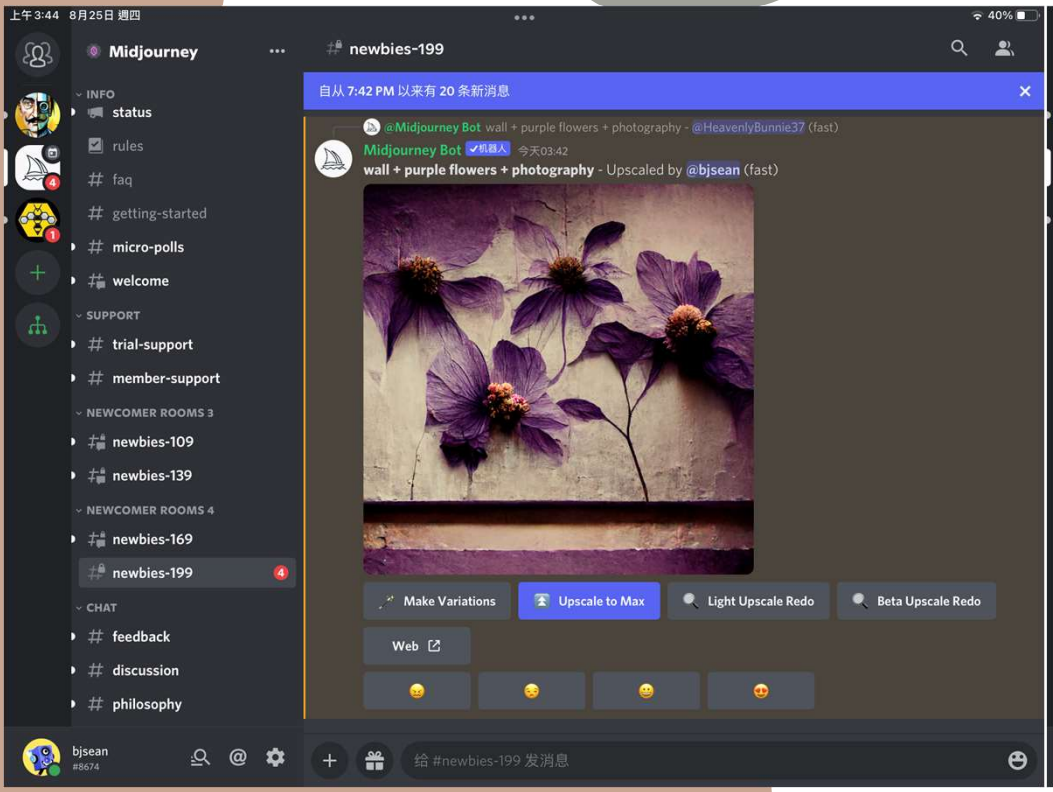


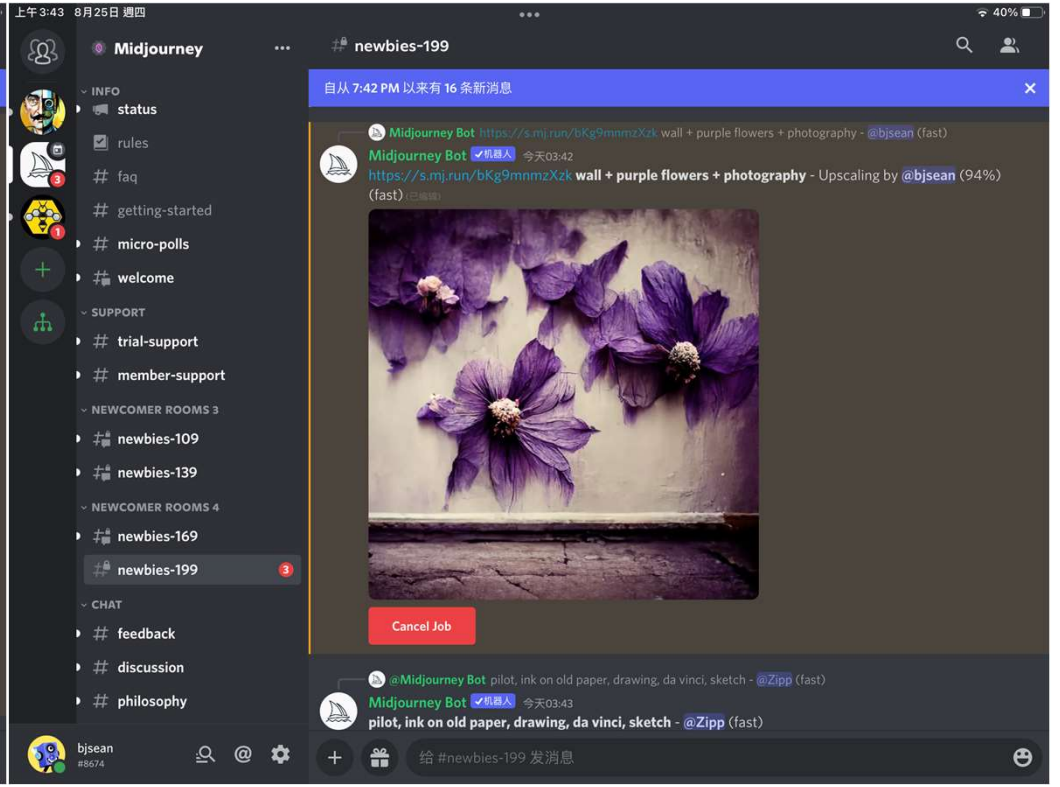


MidJourney

05 另一個AI工具：MidJourney

05 另一個AI工具：MidJourney

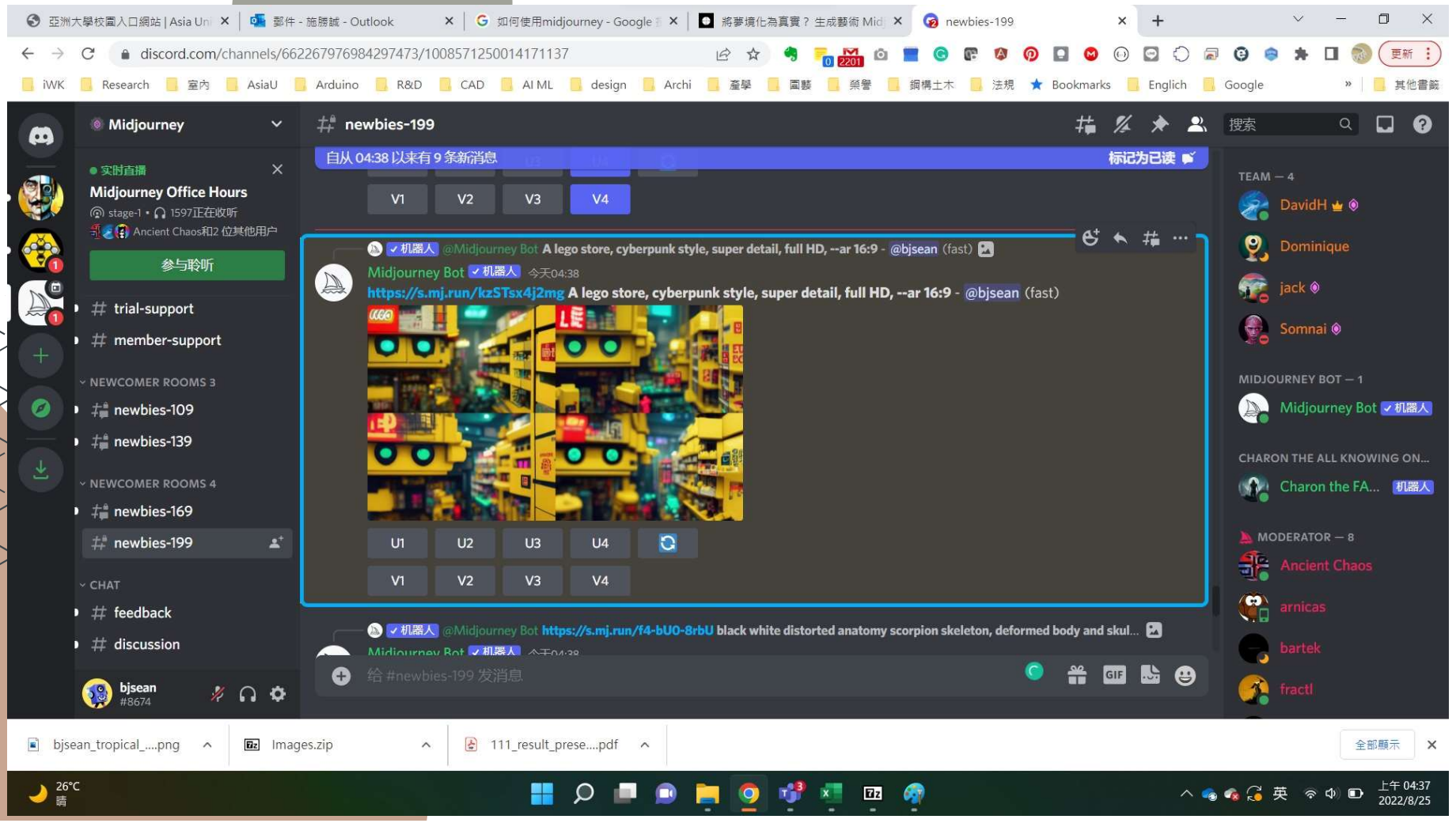




MidJourney

05 另一個AI工具：MidJourney 商空設計

Prompt: A lego store, cyberpunk style, super detail, full HD, --ar 16:9



U: upscale擴增細節

V: veriance變異(產生類似且不同的方案)

05 另一個AI工具：MidJourney

Prompt: A lego store, cyberpunk style, super detail, full HD, --ar 16:9

迭代

05 另一個AI工具：MidJourney

2022/08/22
公開發表
在地安裝
完全開源

stability.ai

Ecosystem Research Blog

22 Aug • Written By Emad Mostaque

Stable Diffusion Public Release

01 Stable Diffusion 的起源

README.md

Stable Diffusion

Stable Diffusion was made possible thanks to a collaboration with Stability AI and Runway and builds upon our previous work:

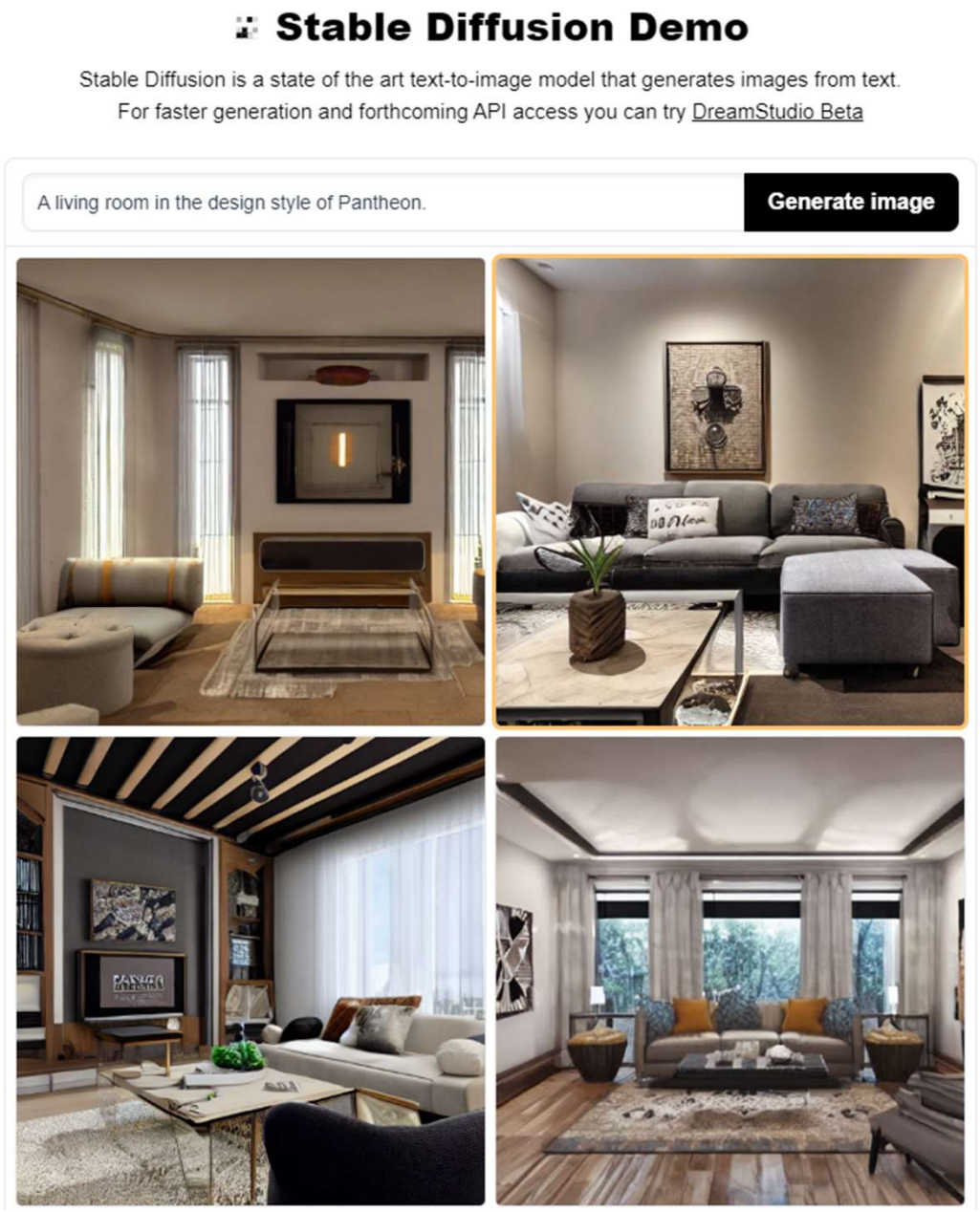
High-Resolution Image Synthesis with Latent Diffusion Models
Robin Rombach*, Andreas Blattmann*, Dominik Lorenz, Patrick Esser, Björn Ommer
CVPR '22 Oral | *GitHub* | *arXiv* | *Project page*

Stable Diffusion is a latent text-to-image diffusion model. Thanks to a generous compute donation from Stability AI and support from LAION, we were able to train a Latent Diffusion Model on 512x512 images from a subset of the LAION-5B database. Similar to Google's Imagen, this model uses a frozen CLIP ViT-L/14 text encoder to condition the model on text prompts. With its 860M UNet and 123M text encoder, the model is relatively lightweight and runs on a GPU with at least 10GB VRAM. See this section below and the model card.

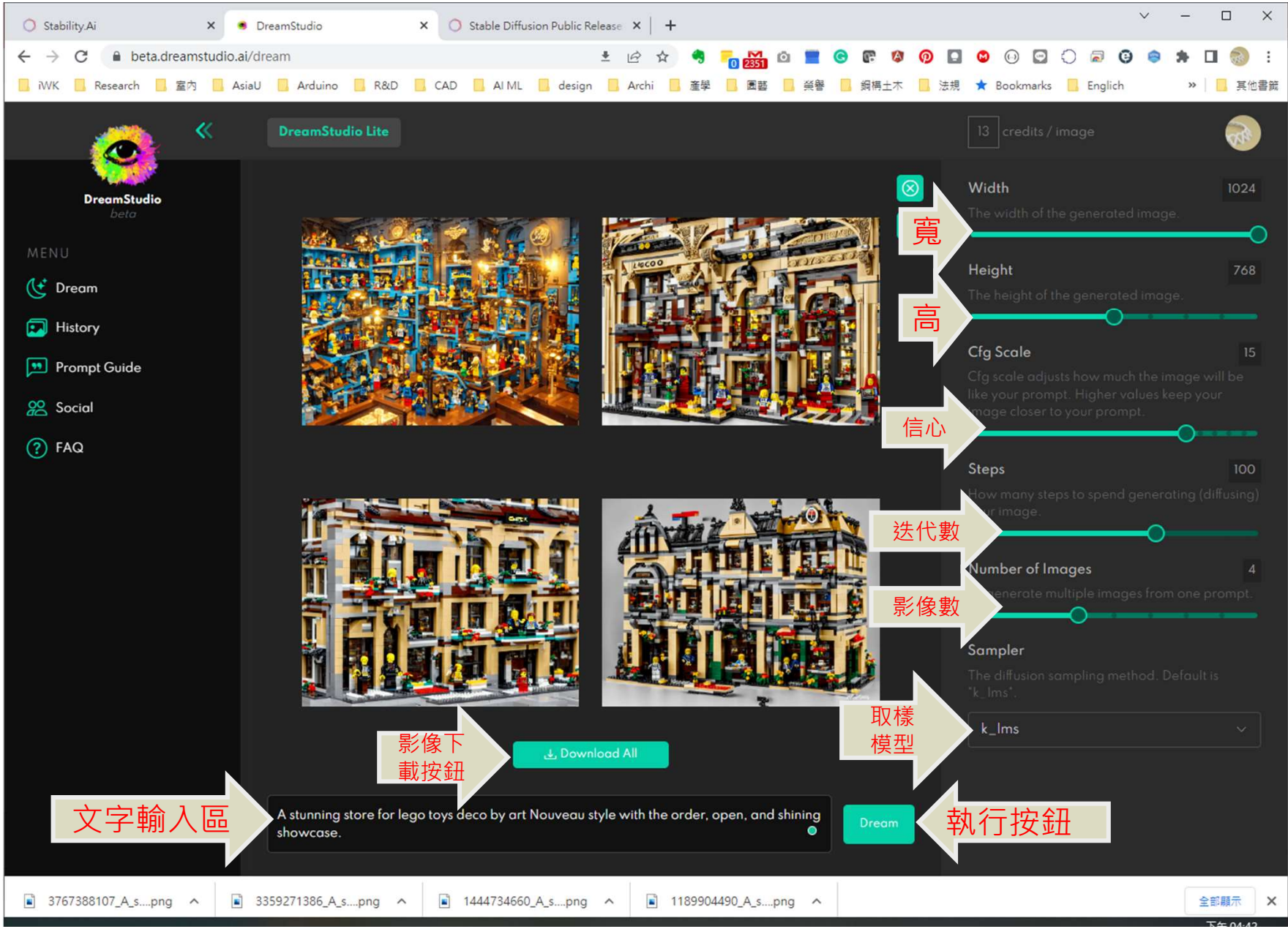
最簡單的stable diffusion網頁介面

完全開源

但需排隊等久一點點



網頁版(II)
https://beta.dreamstudio.ai/dream
有版權限制，可試用10張左右
超過則需購買點數



A stunning store for lego toys deco by art Nouveau style with the order, open, and shining showcase.

一家令人驚嘆的樂高玩具商店，出售新藝術風格的樂高玩具，陳列有序、開放和閃亮。

A living room with stunning fireplace surrounds, beautiful built-in bookcases, welcoming window seats, marvelous material combinations, and more.

一客廳擁有迷人的壁爐、漂亮的內置書櫃、溫馨的靠窗座椅、奇妙的材料組合等等。

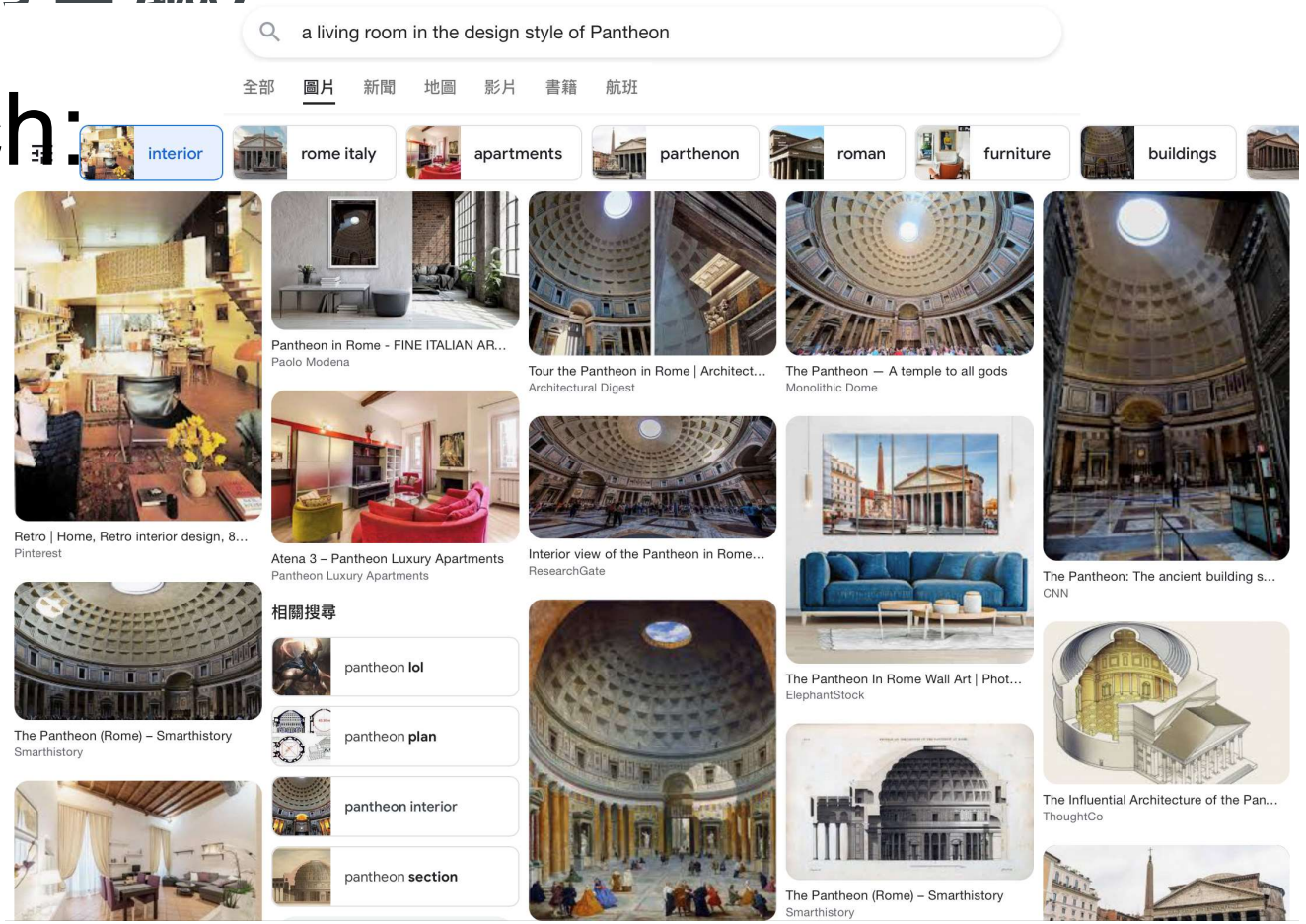
A Japanese design living room with stunning fireplace surrounds, beautiful built-in bookcases, welcoming window seats, marvelous material combinations, and more.

一日本風客廳擁有迷人的壁爐、漂亮的內置書櫃、溫馨的靠窗座椅、奇妙的材料組合等等。

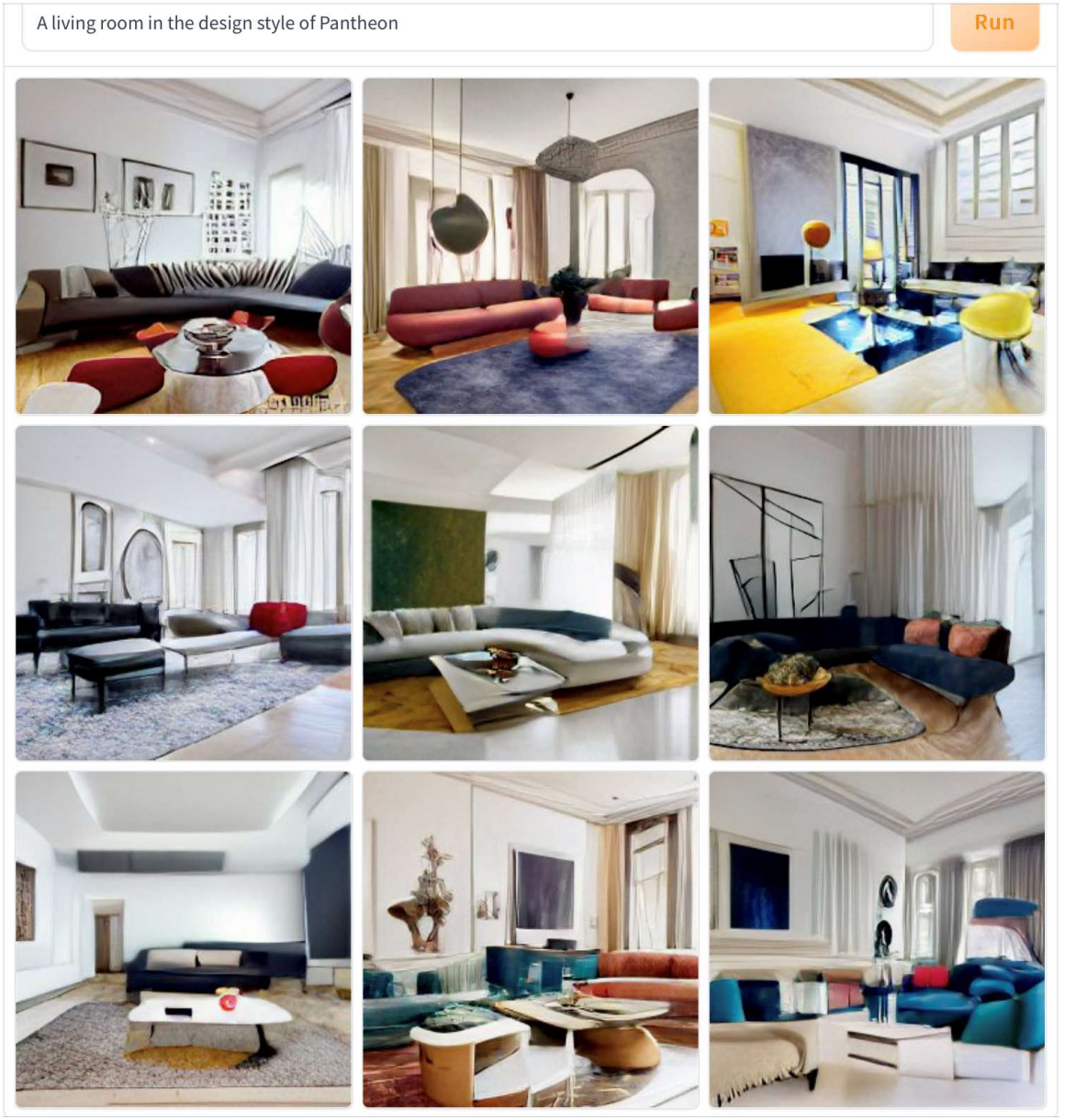
Examples of
1) Google search VS. .
2) DALL·E mini VS.
3) Stable Diffusion VS
4) Dream by WOMBO
5) MidJourney

A living room in the design style of Pantheon. (萬神殿設計風格的客廳)

1) Google search:



2) DALL.E mini



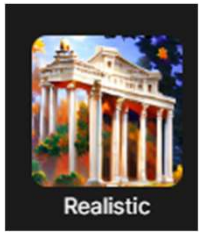
3)Stable diffusion:

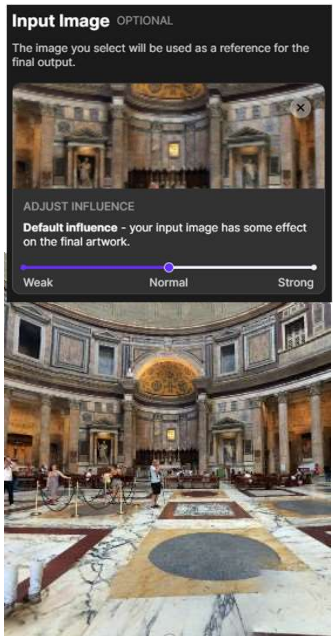
4) Dream by WOMBO

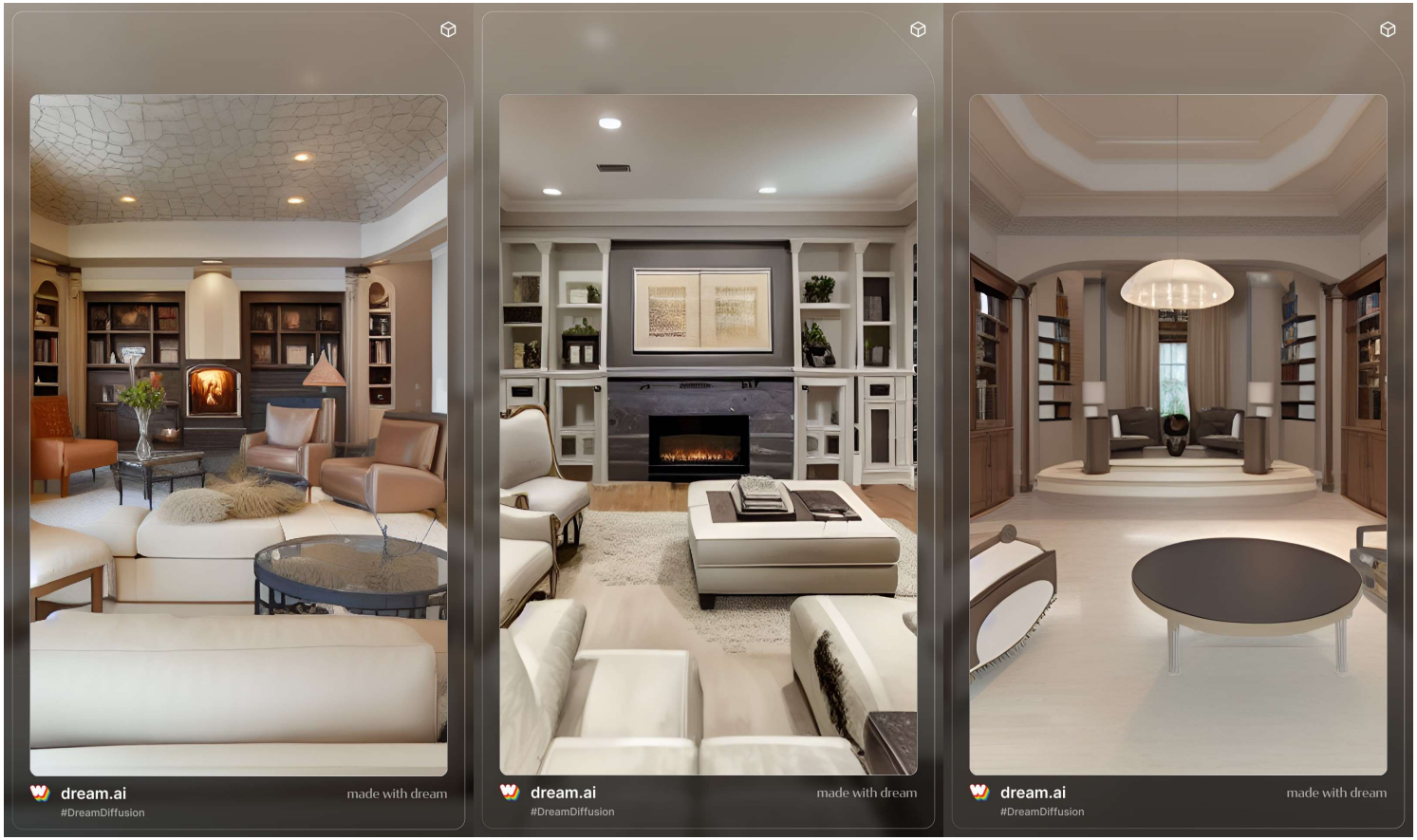
From : https://app.wombo.art/

A living room in the design style of Pantheon with stunning fireplace surrounds, beautiful built-in bookcases, welcoming window seats, marvelous material combinations and more.

Art Style:

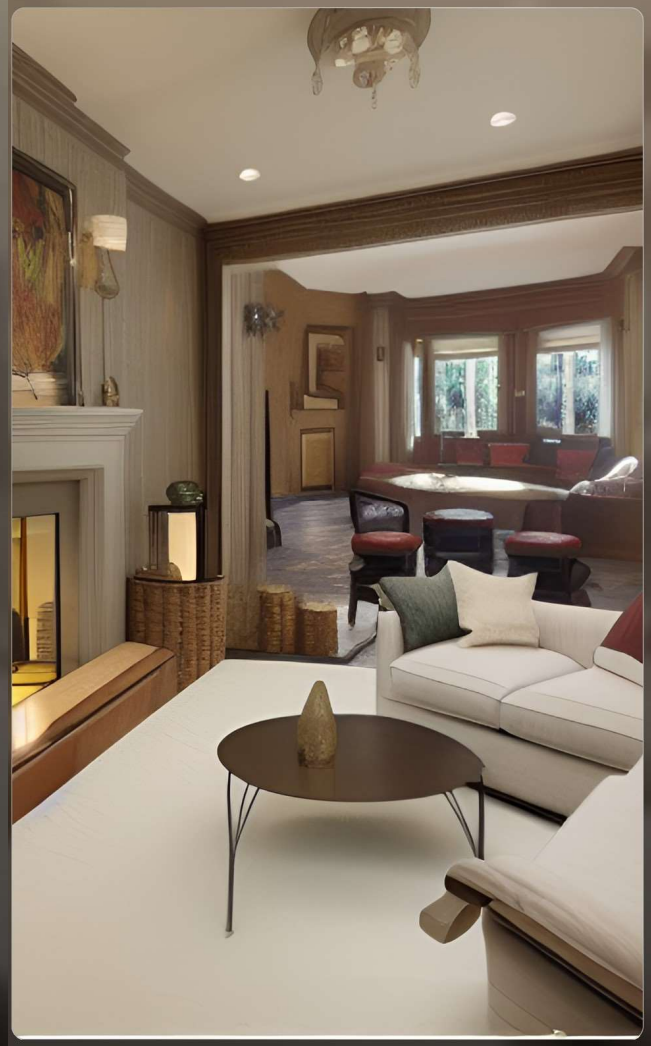






Dream by WOMBO

Art Style:



Dream by WOMBO

Art Style:

5) MidJourney:

upscale

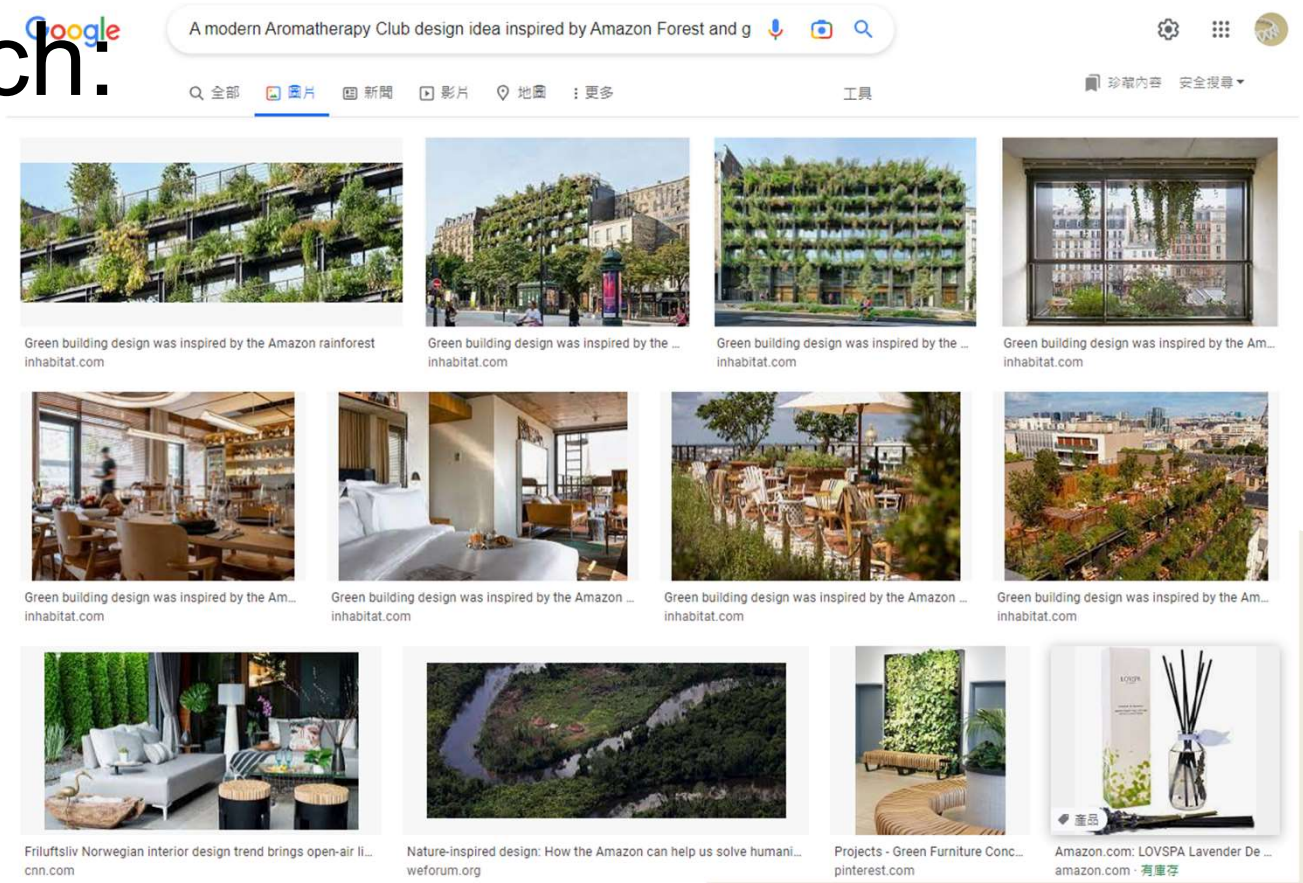
upscale

upscale

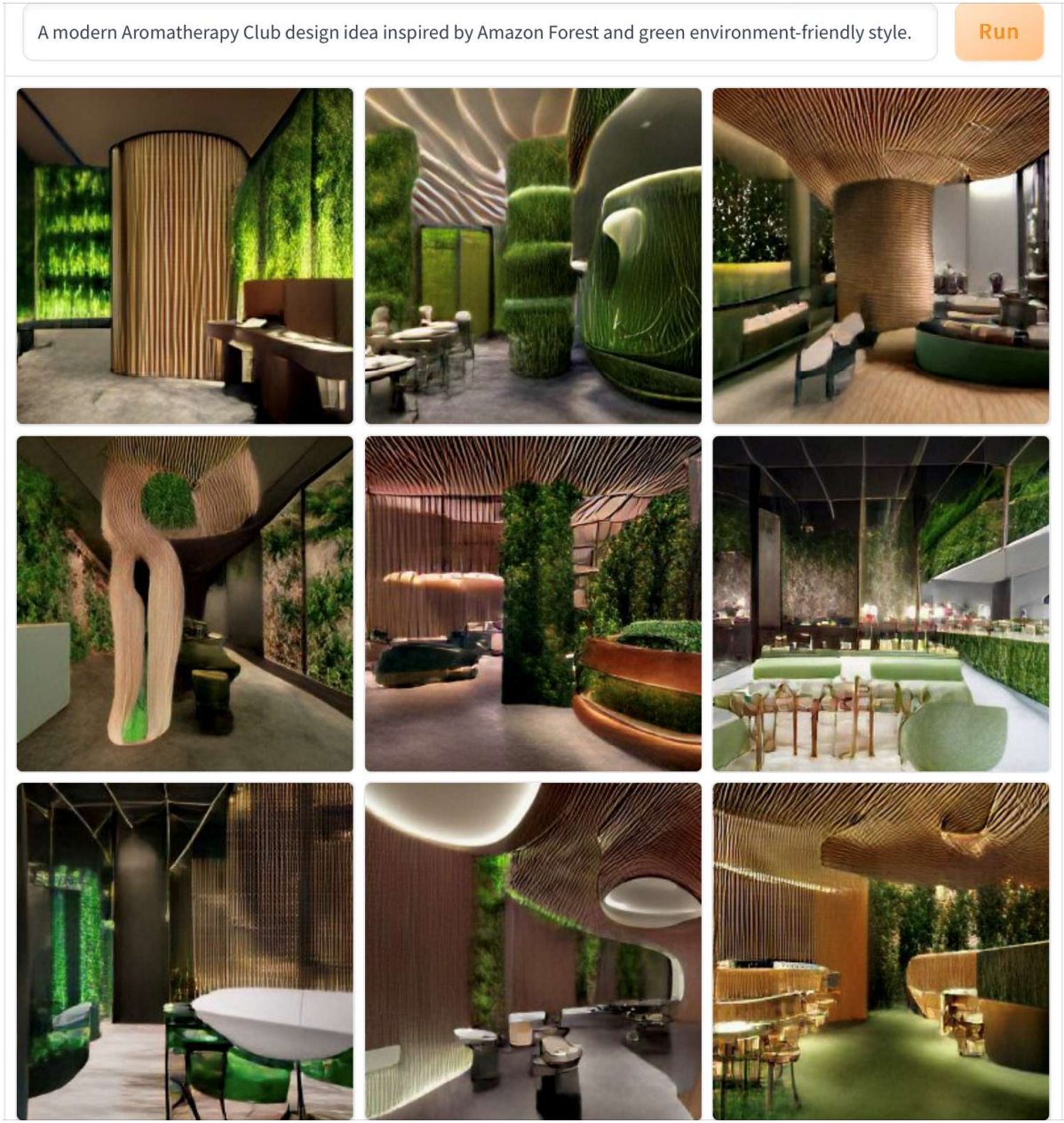
upscale

1.A modern Aromatherap
green environment-frien
(靈感來自亞馬遜森林和綠色環保風格的現代香薰俱樂部設計理念。)

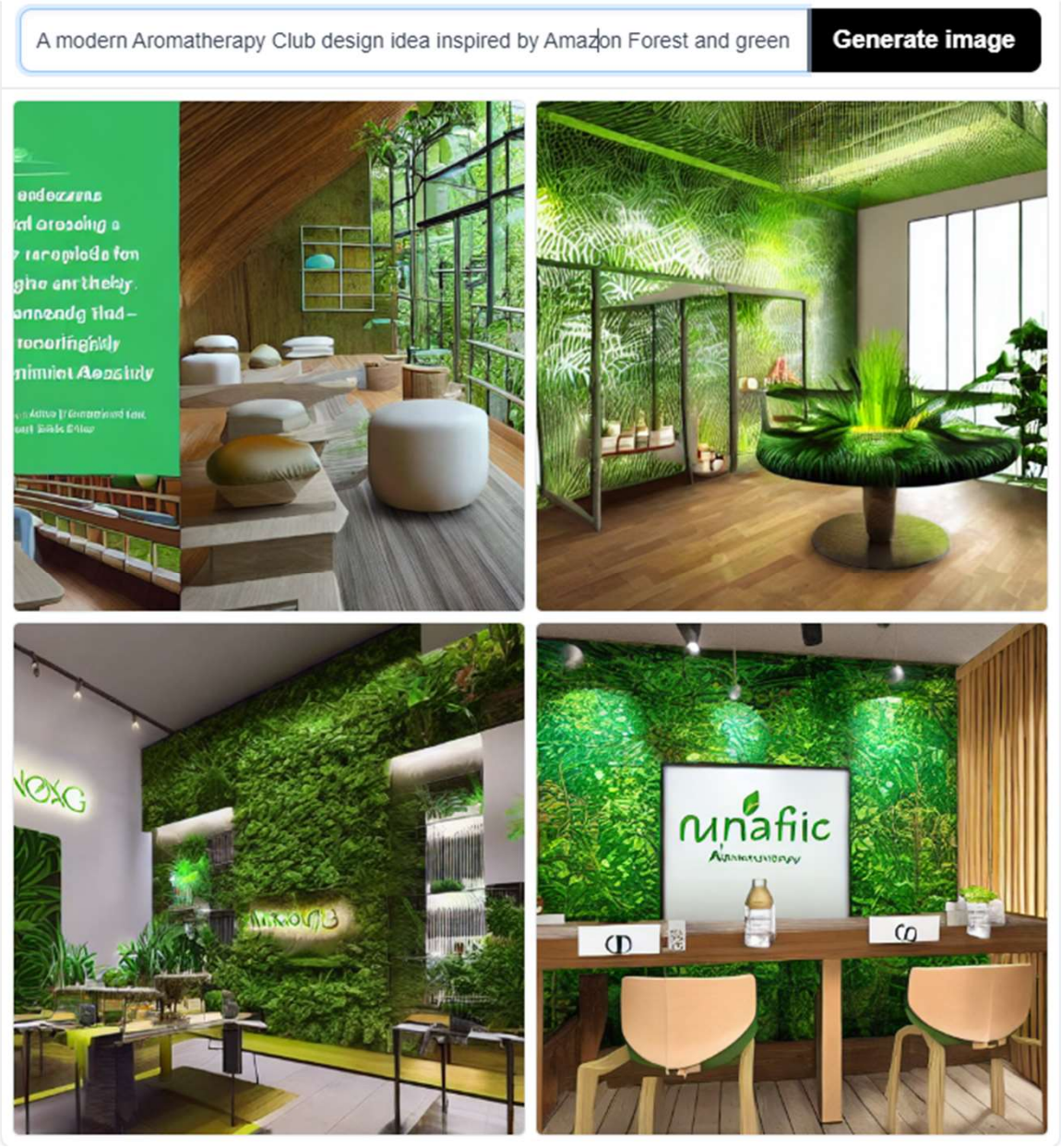
1) Google search:



2) Dall-E II:


A modern Aromatherapy Club design idea inspired by Amazon Forest and green environment-friendly style.
Run

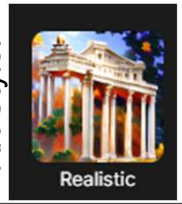
3) Stable diffusion:

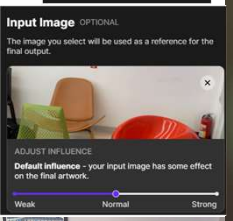


Dream by WOMBO

Prompt: A modern Aromatherapy Club design idea inspired by Amazon Forest and green environment-friendly style. (靈感來自亞馬遜森林和綠色環保風格的現代香薰俱樂部設計理念。)

Art Style:



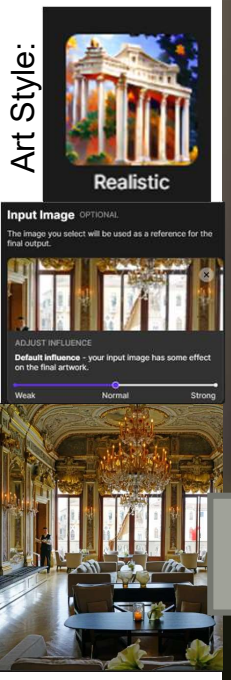


來源影像

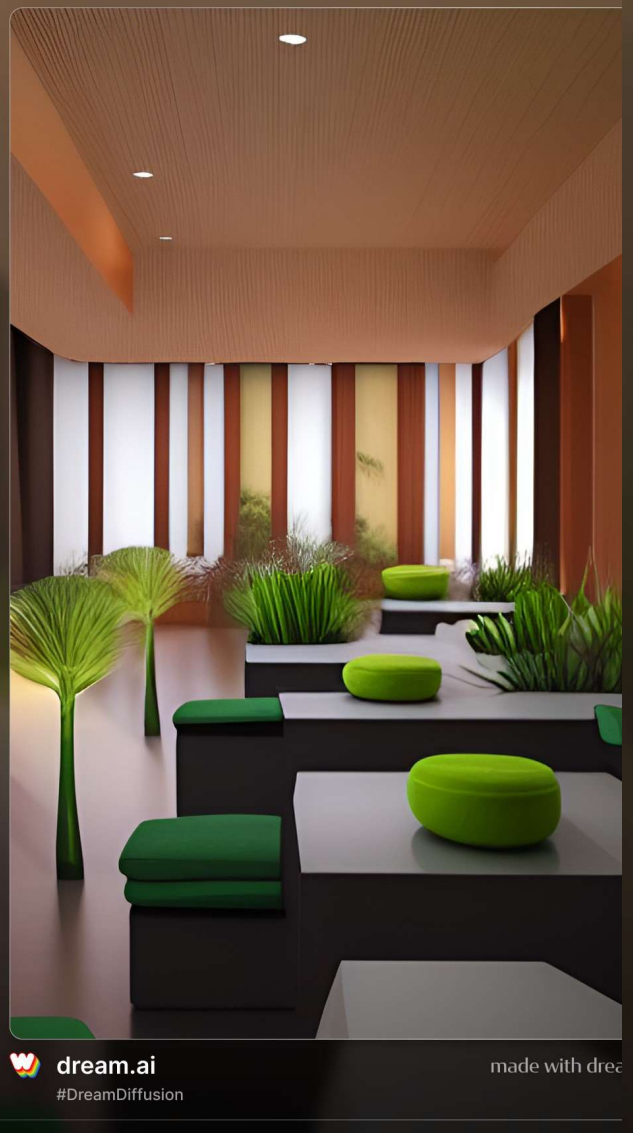
Dream by WOMBO

Prompt: A modern Aromatherapy Club design idea inspired by Amazon Forest and green environment-friendly style. (靈感來自亞馬遜森林和綠色環保風格的現代香薰俱樂部設計理念。)

Art Style:



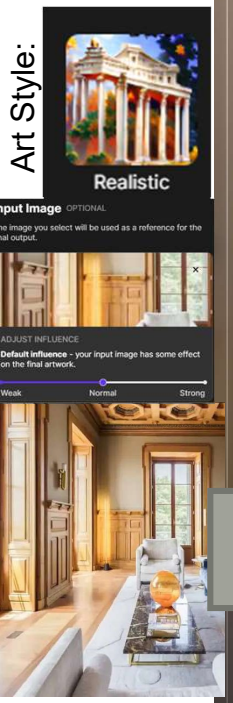
來源影像



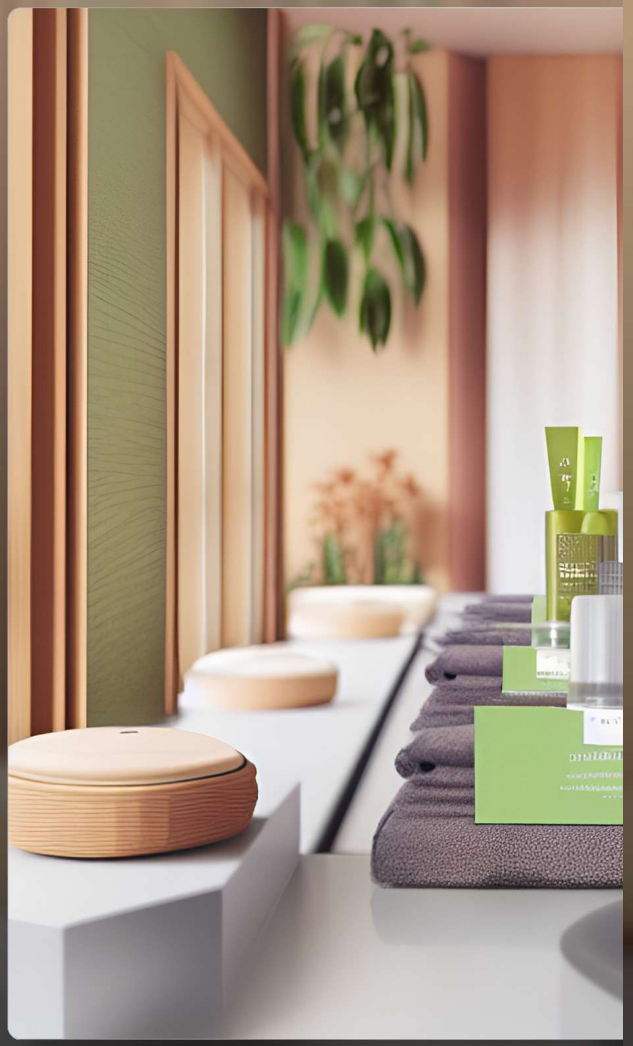
Dream by WOMBO

Prompt: A modern Aromatherapy Club design idea inspired by Amazon Forest and green environment-friendly style. (靈感來自亞馬遜森林和綠色環保風格的現代香薰俱樂部設計理念。)

Art Style:



來源影像



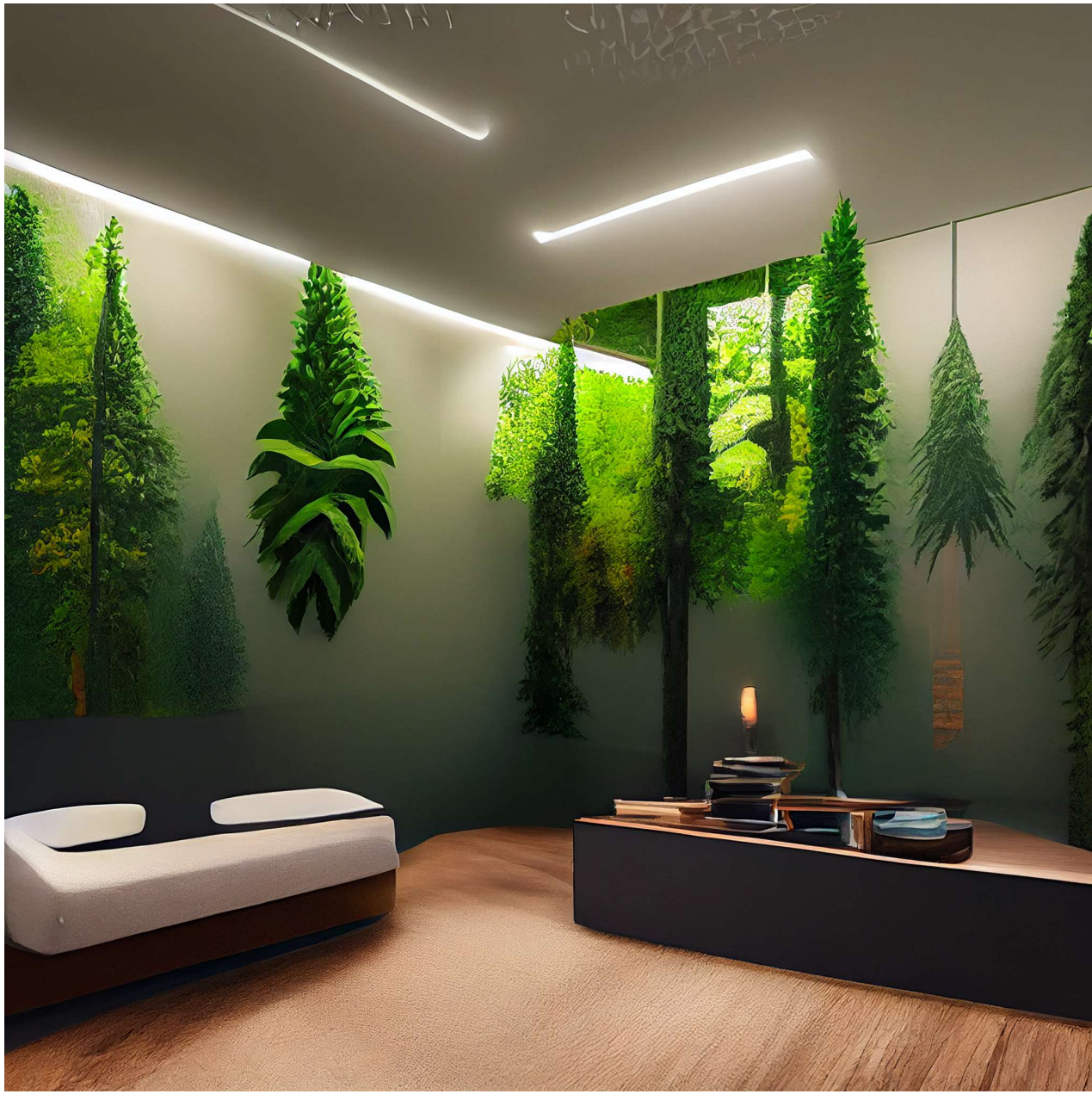
5) MidJourney:

5)MidJourney:

- 影像再增強Upscale

5)MidJourney:

- 增強且變異 Upscaling (beta)



5)MidJourney:

- 再再增強細節Upscaling (Max)

5)MidJourney:

- 增強後再持續變異(新方案)

最新發展 Aug-2022

- Google DreamBooth (25-Aug-2022)
  強調人決定「主題、個性化」介入的影像衍生

- OpenAI OpenArt (30-Sep-2022)
  集大成，提供各大AI Image Fusion成果的搜尋

DreamBooth: Fine Tuning Text-to-Image Diffusion Models for Subject-Driven Generation
主題導向生程式影像融合模型應用於強化文字生成影像之應用

DreamBooth: Fine Tuning Text-to-Image Diffusion Models for Subject-Driven Generation

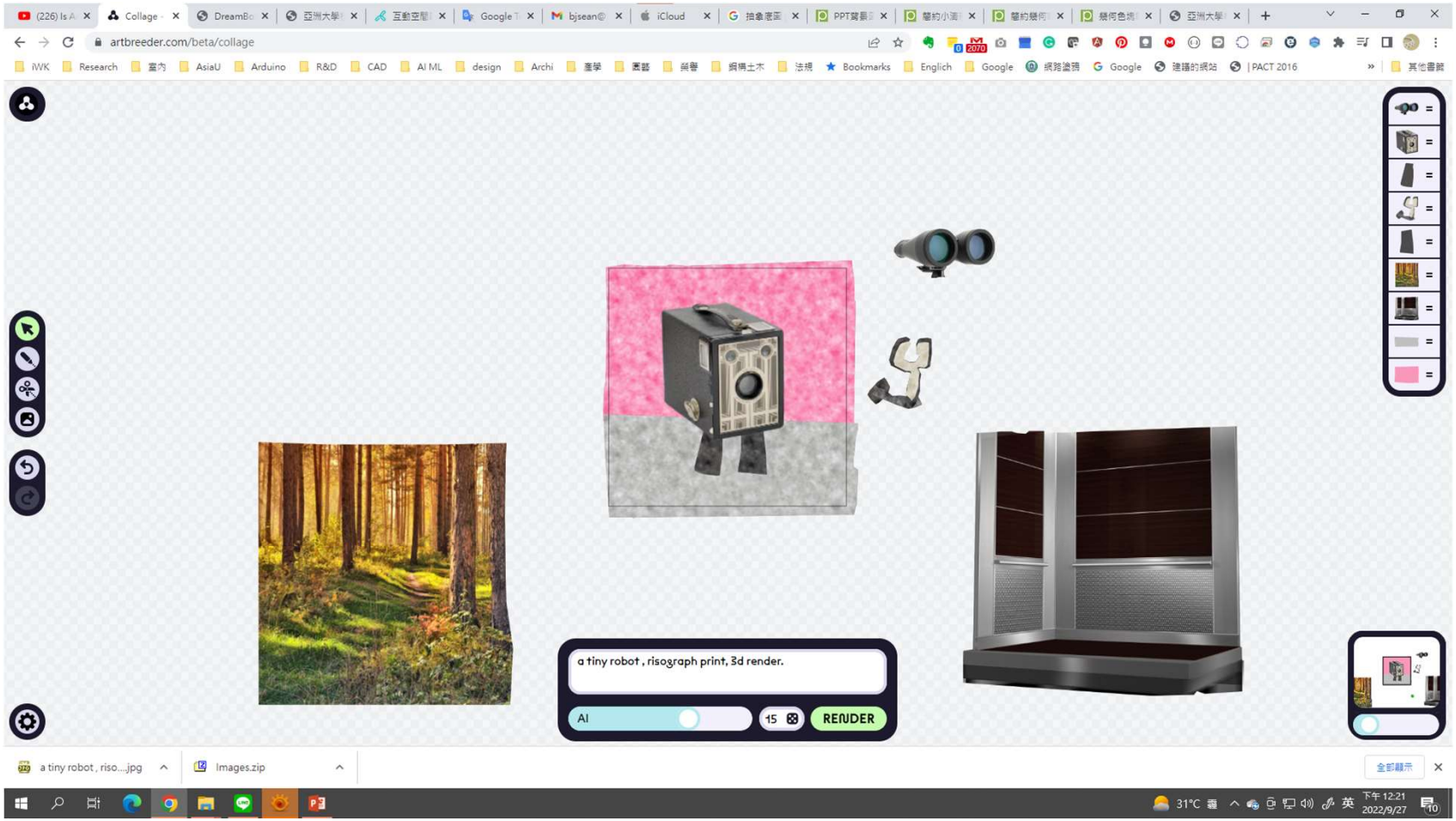
Nataniel Ruiz Yuanzhen Li Varun Jampani Yael Pritch Michael Rubinstein Kfir Aberman

Google Research

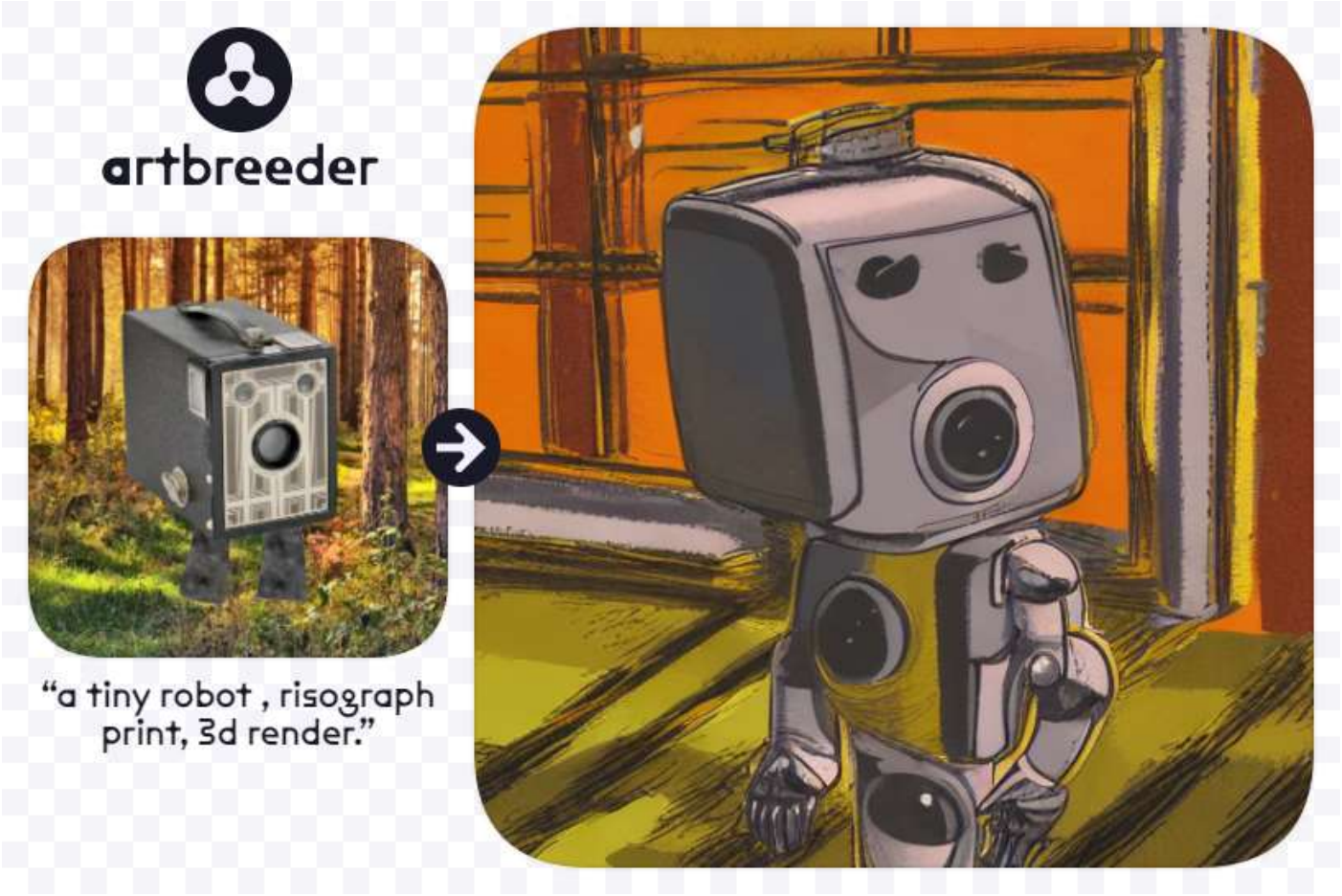
It's like a photo booth, but once the subject is captured, it can be synthesized wherever your dreams take you…

[Paper] [BibTeX]

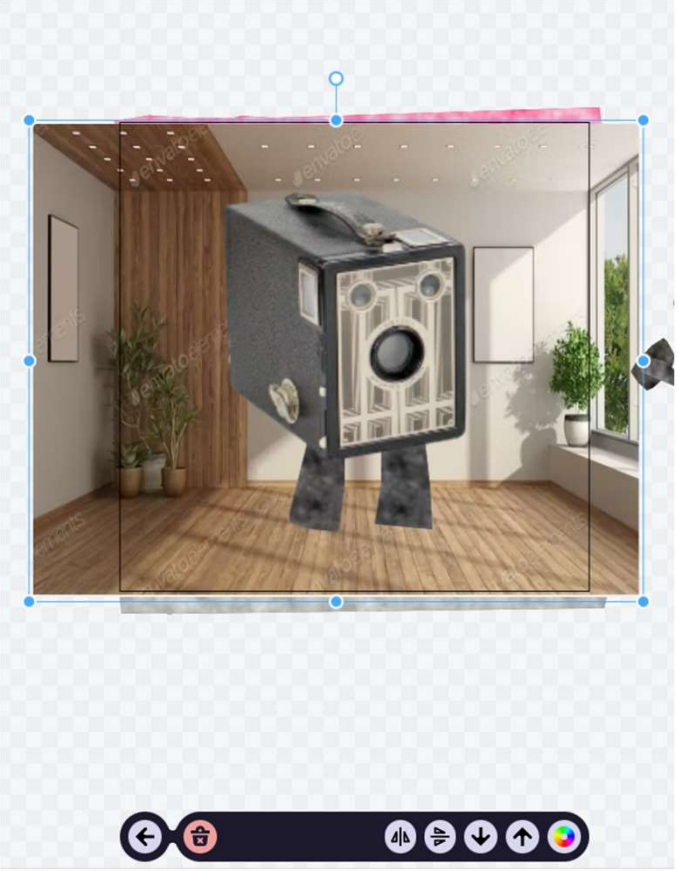
Collager 拼貼畫+AI文字影像融合



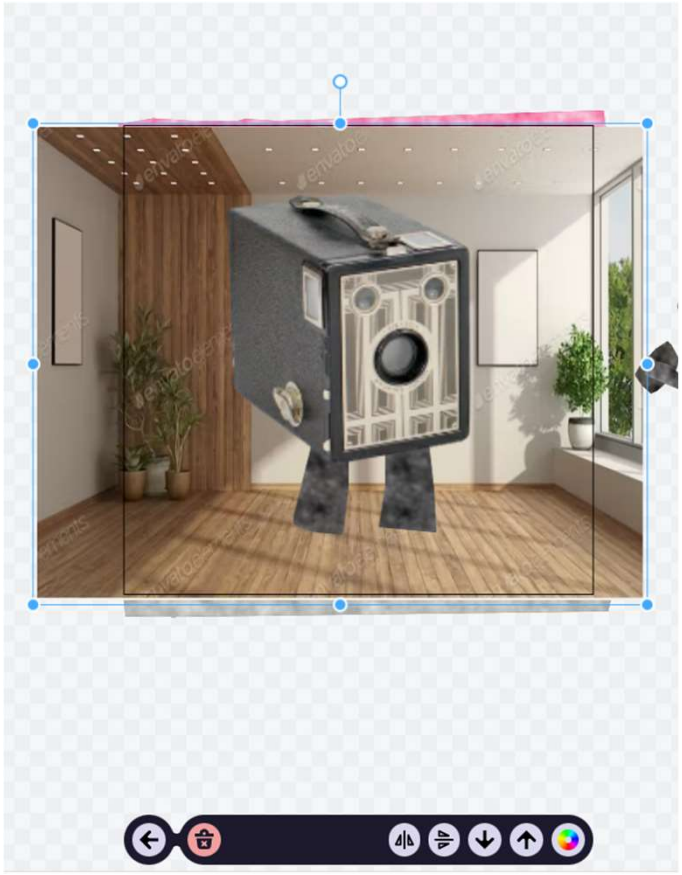
Art Breeder Collager:



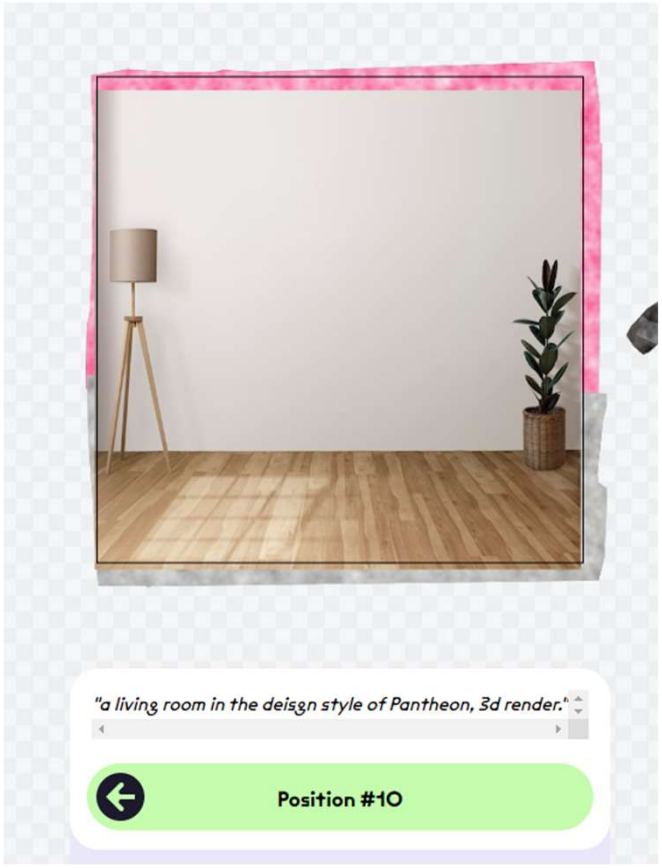
Art Breeder Collager:



Art Breeder Collager:

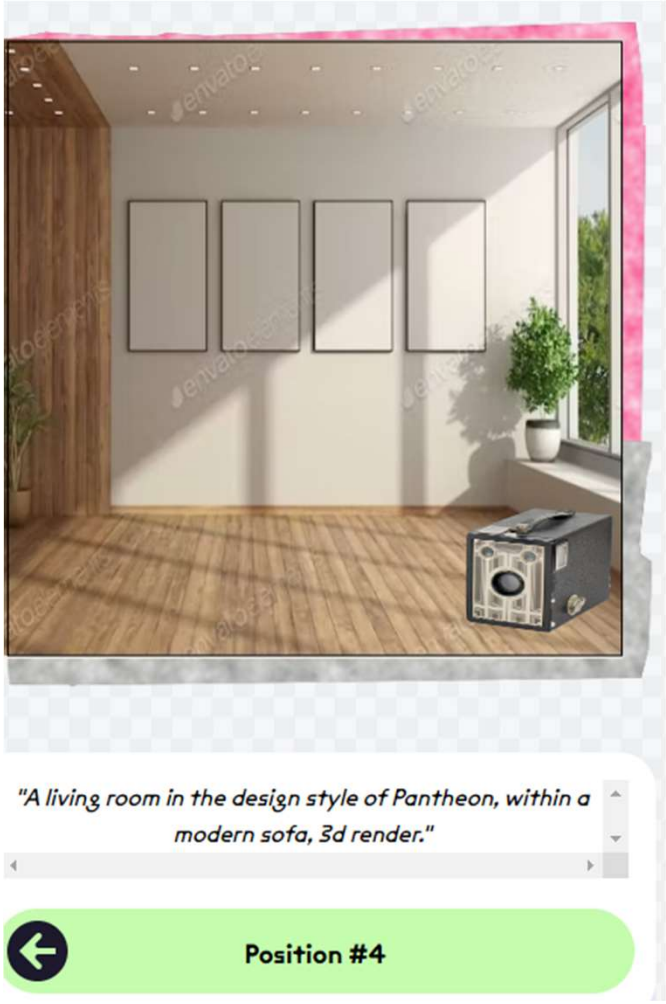


Art Breeder Collager:

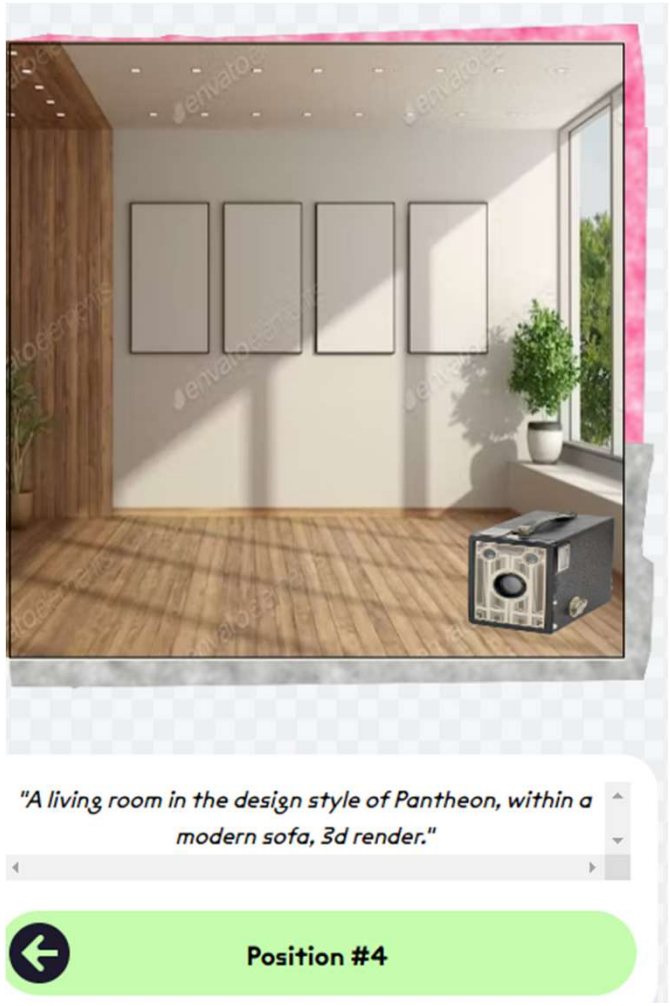


A living room in the design style of Pantheon, within a modern sofa, 3d render.

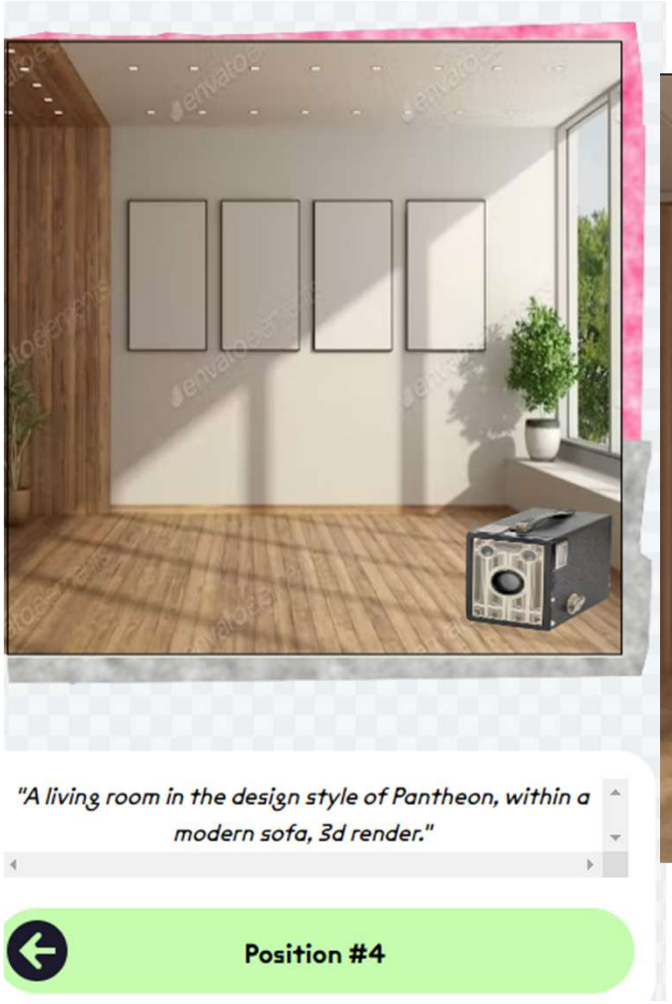
A living room in the design style of Pantheon, within a modern sofa, 3d render.



A living room in the design style of Pantheon, within a modern sofa, 3d render.



A living room in the design style of Pantheon, within a modern sofa, 3d render.



OpenArt

Sign in/Sign up

OpenArt

Search 10M+ of AI art and prompts generated by DALL·E 2, Midjourney, Stable Diffusion

Join OpenArt Discord | Create

Cute 3D for living room in Pantheon style.

Search examples: love in the synthwave form, cute 3D everyday objects, food marketing photography

Filters

Search | Share

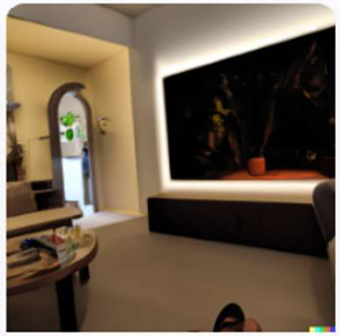
Discovery | Challenges | Community

DALL·E 2 | Midjourney | Stable Diffusion

Search Results "Cute 3D for living room in..."

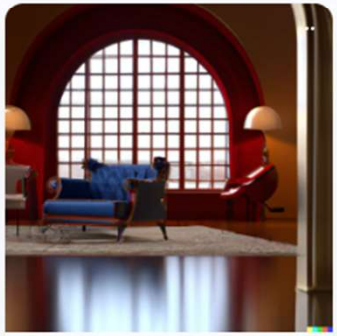
Source about 2 months ago

“ a hall of many architectural feats with massing proportioned according



Source about 2 months ago

Create | Bookmark

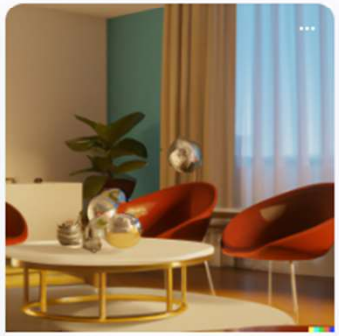


Source 3 months ago

“ High Quality surrealistic 3d render of a art deco modern living room, well

Source 3 months ago

“ A hyperrealistic 3d render of a multicolored gradient modern living



Source 3 months ago

“ A 3d render of a mid century modern living room, fancy, minimal,

AI 文字生成影像的發展

聽到這裡，有沒有想法？

Now, It is your turn.!

施勝誠