Stable Diffusion for Designers

This Document contains three case-studies documenting an array of possibilities to use the open source Stable Diffusion Text-to-Image-Generator for (Graphic)Design.

Do you see an image when you imagine an elephant?

The »SD Aphont« display font was created as a case study for using the Stable Diffusion text-to-image generator in type design, harnessing AI's capabilities to generate diverse variants. To enhance and fine-tune the outcomes of this process, a LORA (Low-Rank Adaptation) was trained based on a custom dataset from a broad spectrum of references containing both letters and abstract symbols.

Aphantasia is the inability to create mental imagery.

The phenomenon was first described by Francis Galton in 1880, but has since remained relatively unstudied. Interest in the phenomenon renewed after the publication of a study in 2015 conducted by a team led by Professor Adam Zeman of the University of Exeter.

Text Sample using conditional ligatures, 130pt

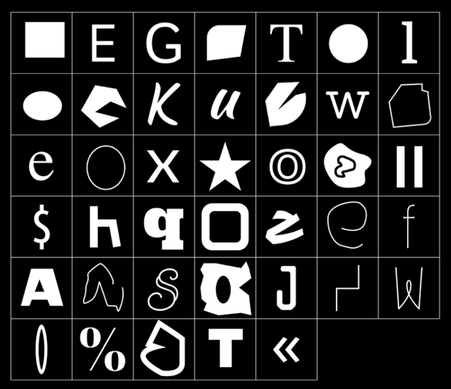
Text Sample using conditional ligatures, 50pt

Text Source: en.wikipedia.org/wiki/Aphantasia

The characters were generated using the Automatic1111 Stable Diffusion WebUIs img2img mode. By using archetypical letterforms as input the accuracy of the output is ensured. The custom LoRA model is trained for style using the Kohya_ss WebUI.

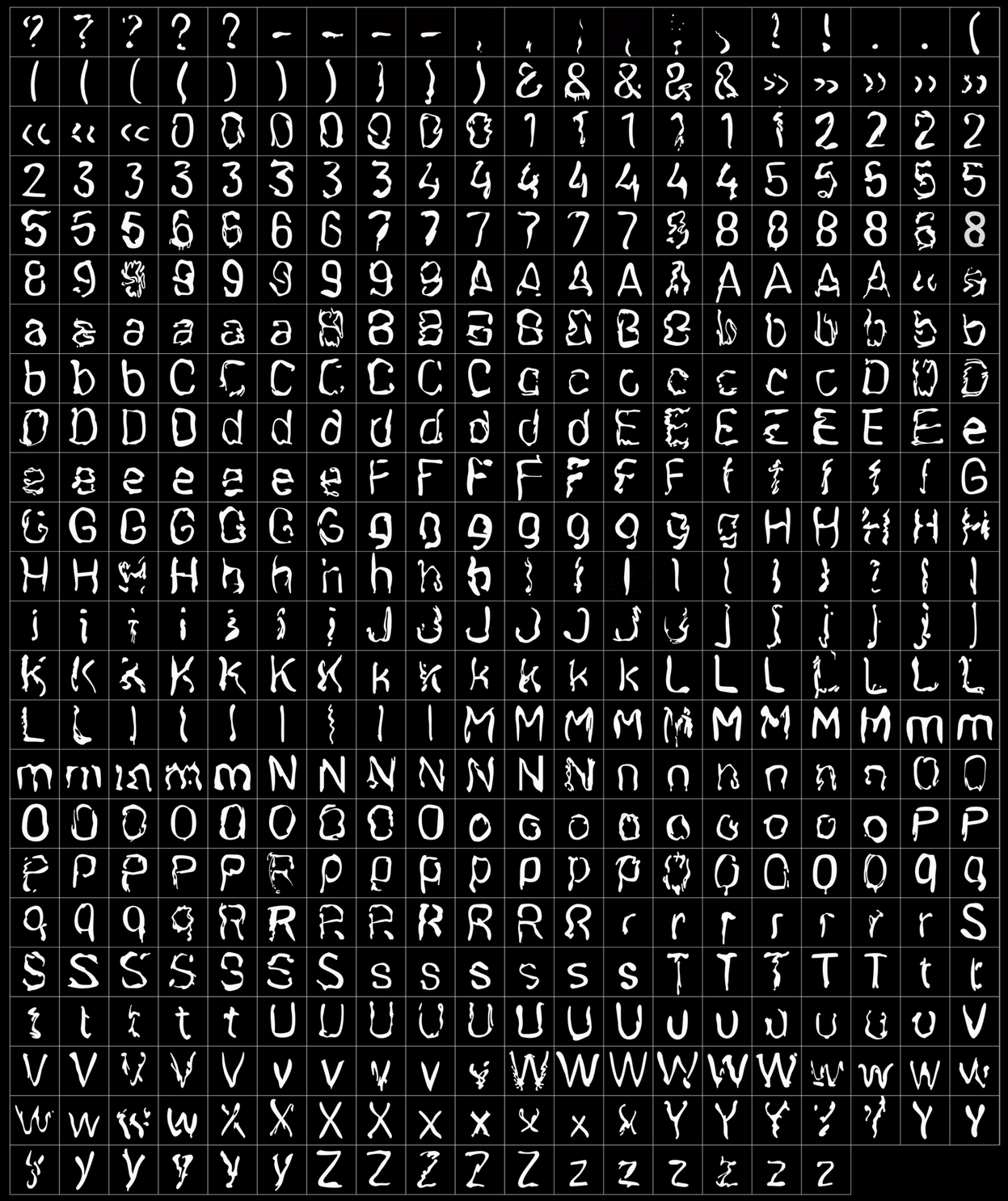
Parameters

Model	v1-5-pruned-emaonly.ckpt
LoRA	zhuj—typography:1.75
Mode	img2img
Prompt	zhuj style, single letter, type design, typography, on a black background, flat, ((monochrome)) (((fluid, liquid, melting, simple)))
Negative Prompt	photography, color, gradient, ((outline)), blurry, bad quality, low quality, rendering, low contrast, texture, grey, background, ((glow)), chrome, shading, details, shaded, complex
Denoising	0.75
CFG-Scale	12.5
Sampler	DPM++ 2M Karras
Steps	20
Seed	3044271388



Dataset used for the training LoRA model »zhuj_typography«.

Archetypical letterforms were used to provide a baseline for the generation.

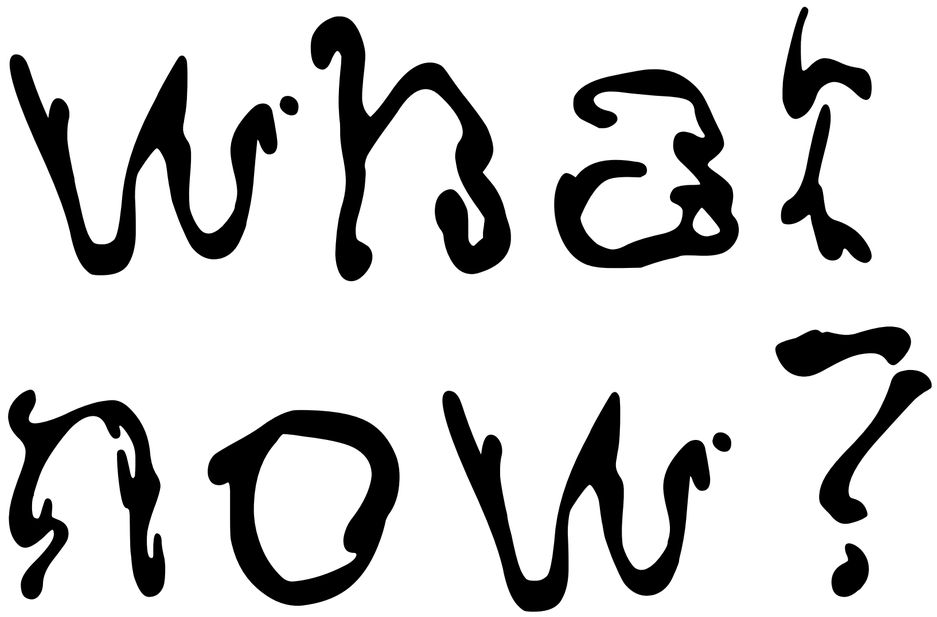


In total 5840 characters were created, 80 variants for each letter in the character set. Shown above are the 477 selected characters.

A	B	C	D	E	F	G	H	I	J
K	L	M	N	O	P	Q	R	S	T
U	V	W	X	Y	Z				

a	b	c	d	e	f	g	h	i	j
k	l	m	n	o	p	q	r	s	t
u	v	w	x	y	z				

1	2	3	4	5	6	7	8	9	0
&	-	,	.	?	!	»	«		



The presented case study illustrates the potential of using Stable Diffusion as a type design tool. Contrary to what some designers may fear, it is not a one-click solution. In addition to prompt engineering, considerable curation and fine-tuning are necessary to create something of value.

As designers, it's our responsibility to actively engage in shaping the future of design tools and to explore their impact on our work. Instead of reflexively rejecting AI, we should embrace it as an opportunity for innovation.

Primary character set selected for »AD Aphont«. The font is created in the OTF Format and includes further variants from the selection shown on page 3.

The sans-serif font utilized in this document was also created using the process outlined in this case study.

The following case study shows how using Stable diffusion we created key visuals for a fitness brand. Instead of relying on stock photography to establish a distinct visual identity for corporate design, tools like Stable Diffusion enable the creation of a unique style free from predefined biases.

This not only accelerates the design process but also provides the client with a clearer vision for their brand. While it is definitley possible to reach production quality given enought time and resources the images can definitely convey the desired photographic style to a professional photographer effectively.

Image created and upscaled using the »absolutereality_v16« checkpoint. Further edits were made in Adobe Photoshop.

The Workflow used to generate the images shown in this case-study consists of three main steps.

1 Prompt Engineering

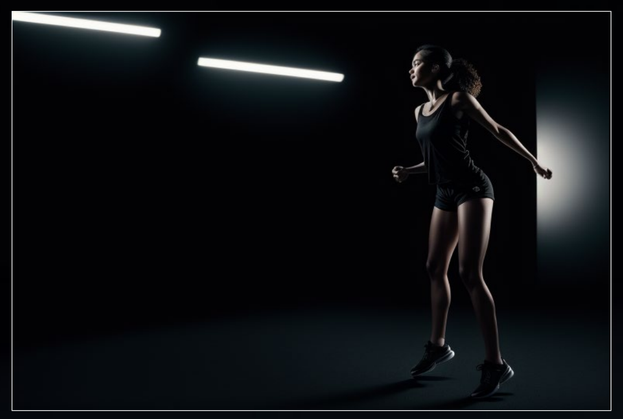
The basic style of the image is created by crafting a prompt that reliably creates images of the desiered style ober a wide range of seeds. Negative Prompts can be very helpful in fine tuning the result by explicitly excluding unwanted aspects from the image generation process.

2 Composition using ControlNets

Currently the image composition cannot reliably be influenced by the text prompt. Using ControlNets on top of Stable Diffusion however makes it really easy to use sketches or other reference material to influence the composition.

3 Fine Tuning and Upscaling

Using the Image-to-Image process of Stable Diffusion tools like in- and outpainting or upscaling can be utilized to further improve the quality and make granular adjustments. Image editing software like Photoshop can of course also be used at this step.



The initial result before fine tuning and upscaling clearly shows the reatction to the style cues and could already be used as part of a moodboard or definiton of a style for photo production.

Baseline Parameters

Model	absolutereality_v16.ckpt
LoRA	LowRA:0.7, more_details:1
Mode	text2img
Prompt	a woman in a black sports top and shorts is jumping up in a dark room, on the right side, good posture, dim volumetric lighting, studio lighting, key light, dark theme, shot on fujifilm x-t4
Negative Prompt	FastNegativeV2, 3D render, window, light bar, light strip, cross track pattern, bad anatomy, duplicate
Denoising	0.75
CFG-Scale	7
Sampler	DPM++ 2M Karras
Steps	25
Seed	1901353499

Creating photorealistic images stands as a primary focus within the open-source community. Regular releases of finely-tuned model checkpoints, specialized LoRAs, Hypernetworks, and other features are common. These tools make it remarkably straightforward to build upon them and, if needed, develop project-specific models—for instance, ensuring the generation of cohesive characters or styles.

AI image generation models hold significant promise as tools for designers. They offer new creative avenues, enabling designers to explore unconventional visual expressions, generate novel design elements, and overcome creative limitations.

By integrating AI into their processes, designers can streamline workflows, derive inspiration from a broad array of generated content, and develop innovative concepts. The case study presented here serves as an illustrative example, showcasing the potential of AI as a tool not only for image creation but also to help in developing image styles for brands.