

ImageGen

Program

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 - Pros / Cons
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 - Discussion

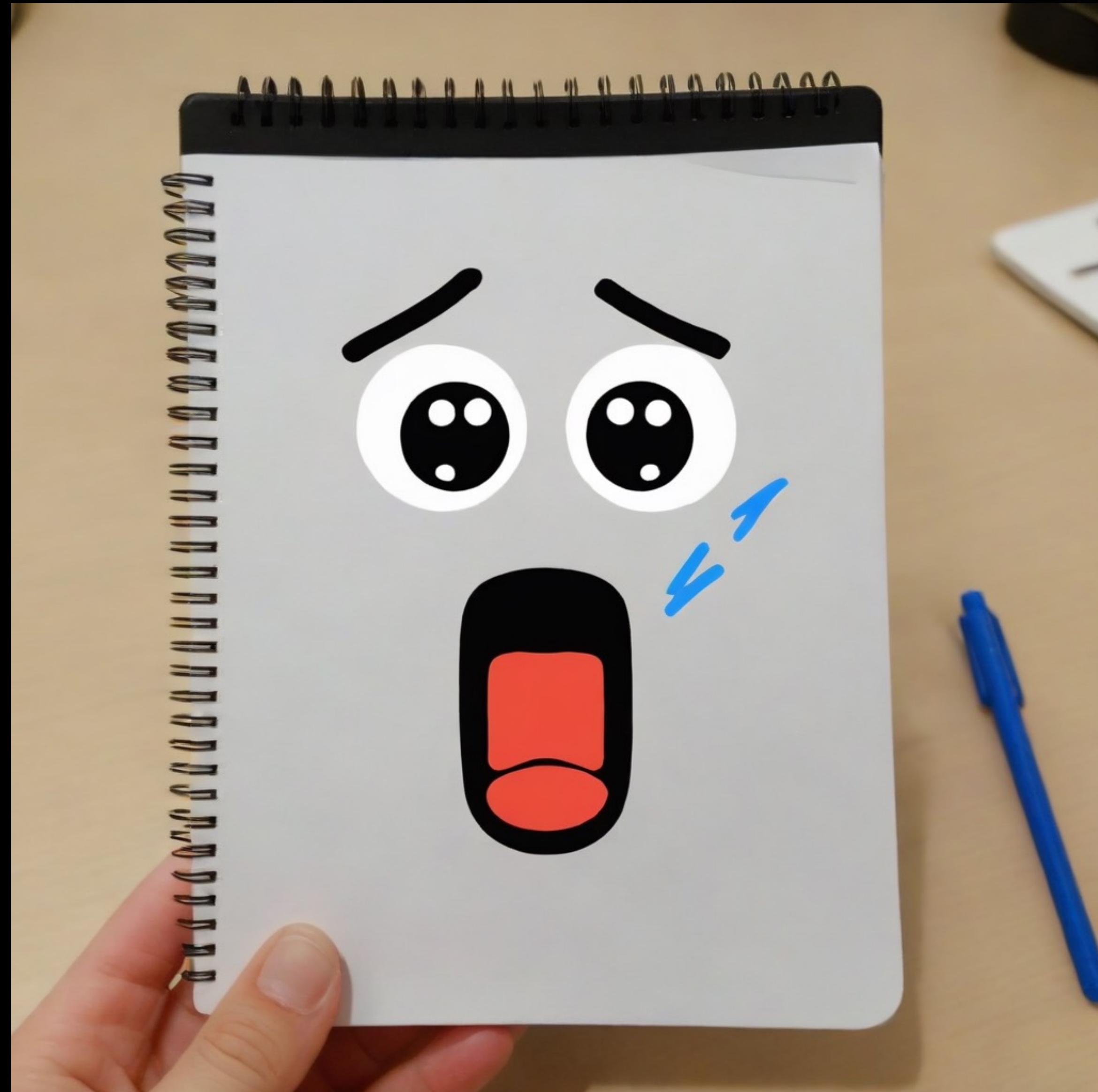
→ Intro

Introduction - Disclaimer

- Focus on Image Gen.
- Focus on digital
- Findings are based on my own observation.
- We will consider image generative models as *fair use* for this presentation.

Keeping the motivation to learn
in the age of one click image generation

Introduction - The plan



→ “The problem with AI right now isn't that it's smart,
it's that it's stupid in ways we can't always predict.”

John Oliver

Pretend I'm
not even here.



Introduction - Short history of Image generation - First Neural "AI" Art 2015-2021



Introduction - Short history of Image generation - First Neural "AI" Art 2015-2021



Coarse styles
 $(4^2 - 8^2)$



Middle styles
 $(16^2 - 32^2)$



Fine styles
 $(64^2 - 1024^2)$



Introduction - Short history of Image generation - Second Wave (2022-)



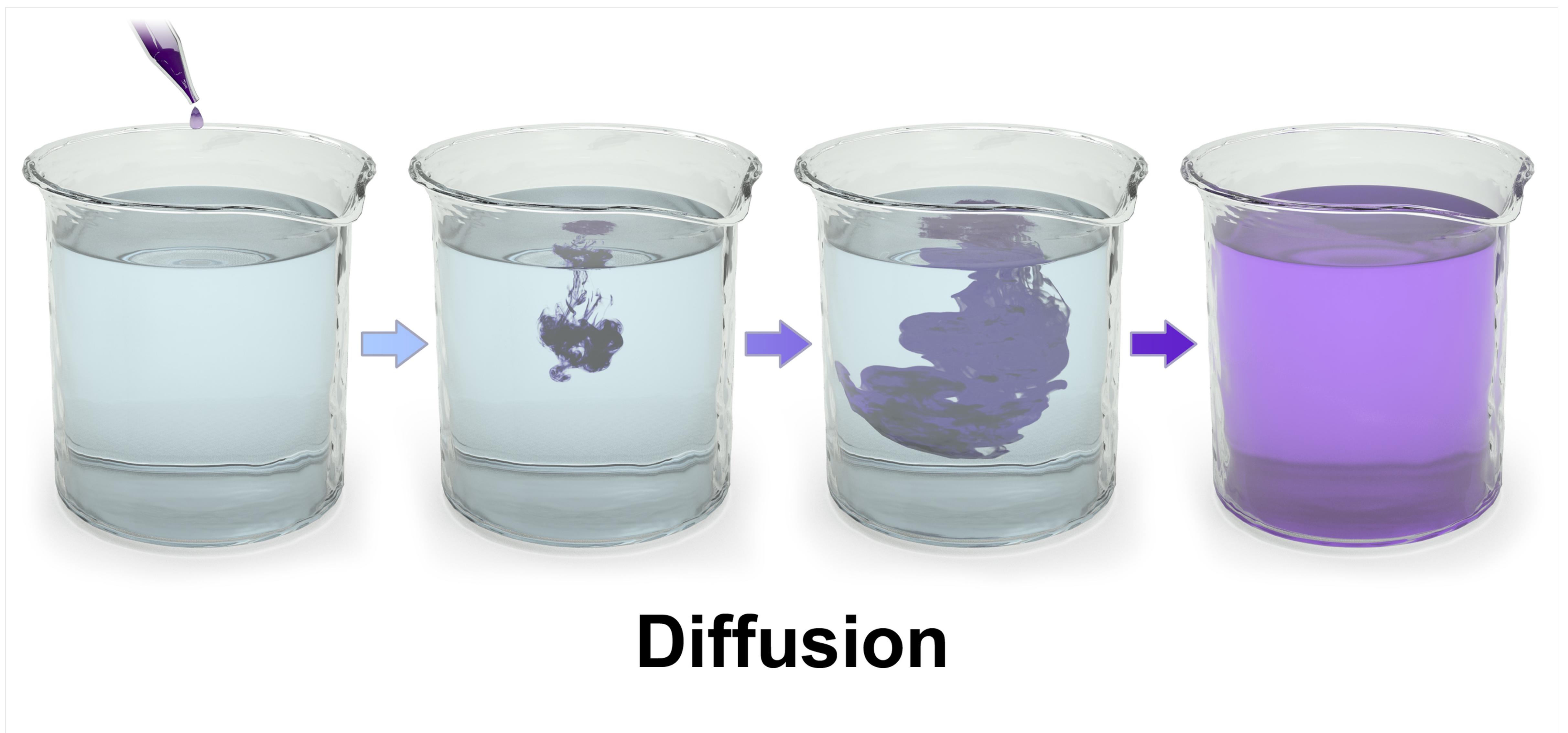
Introduction - Short history of Image generation - Second Wave (2022-)



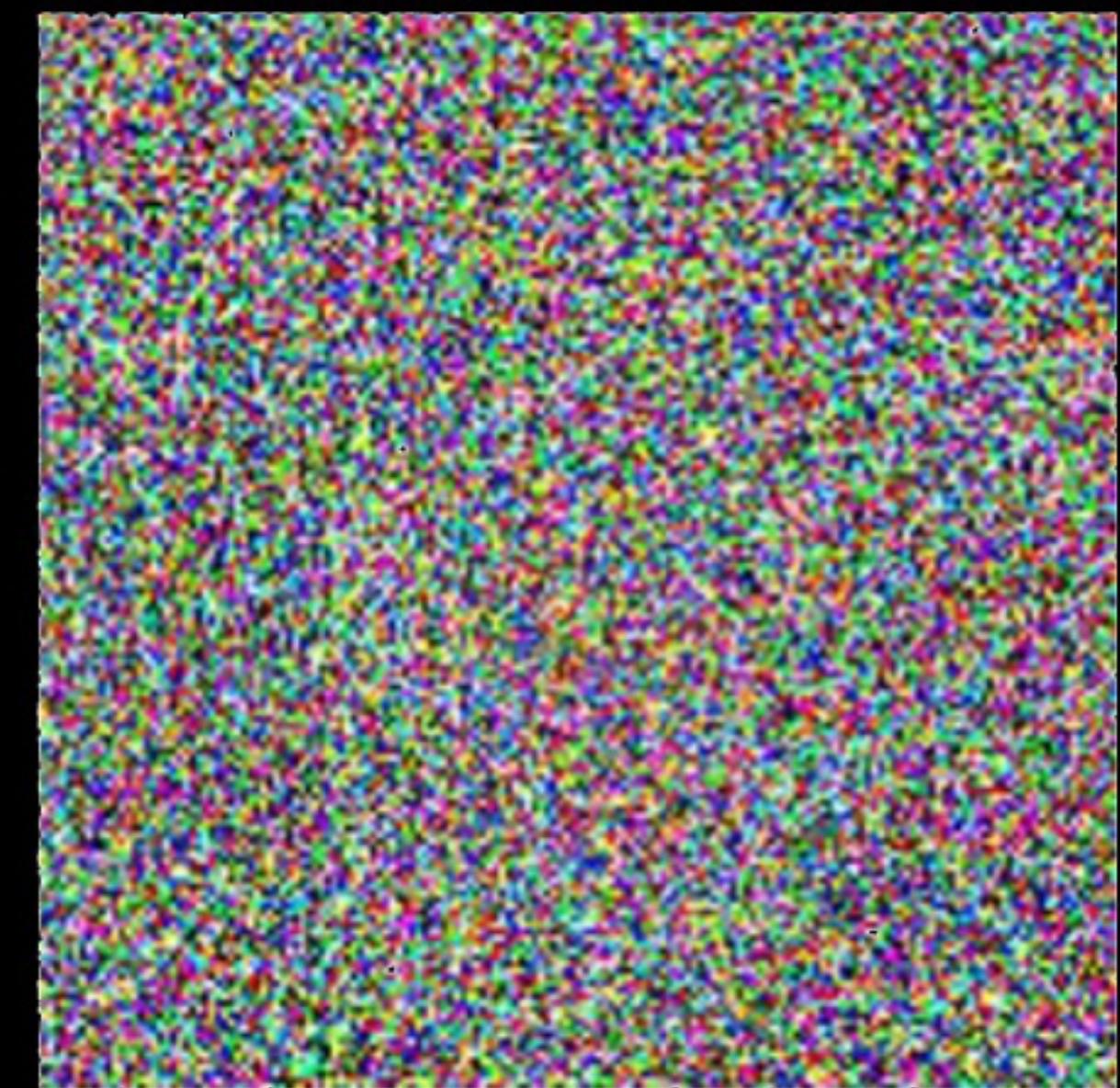
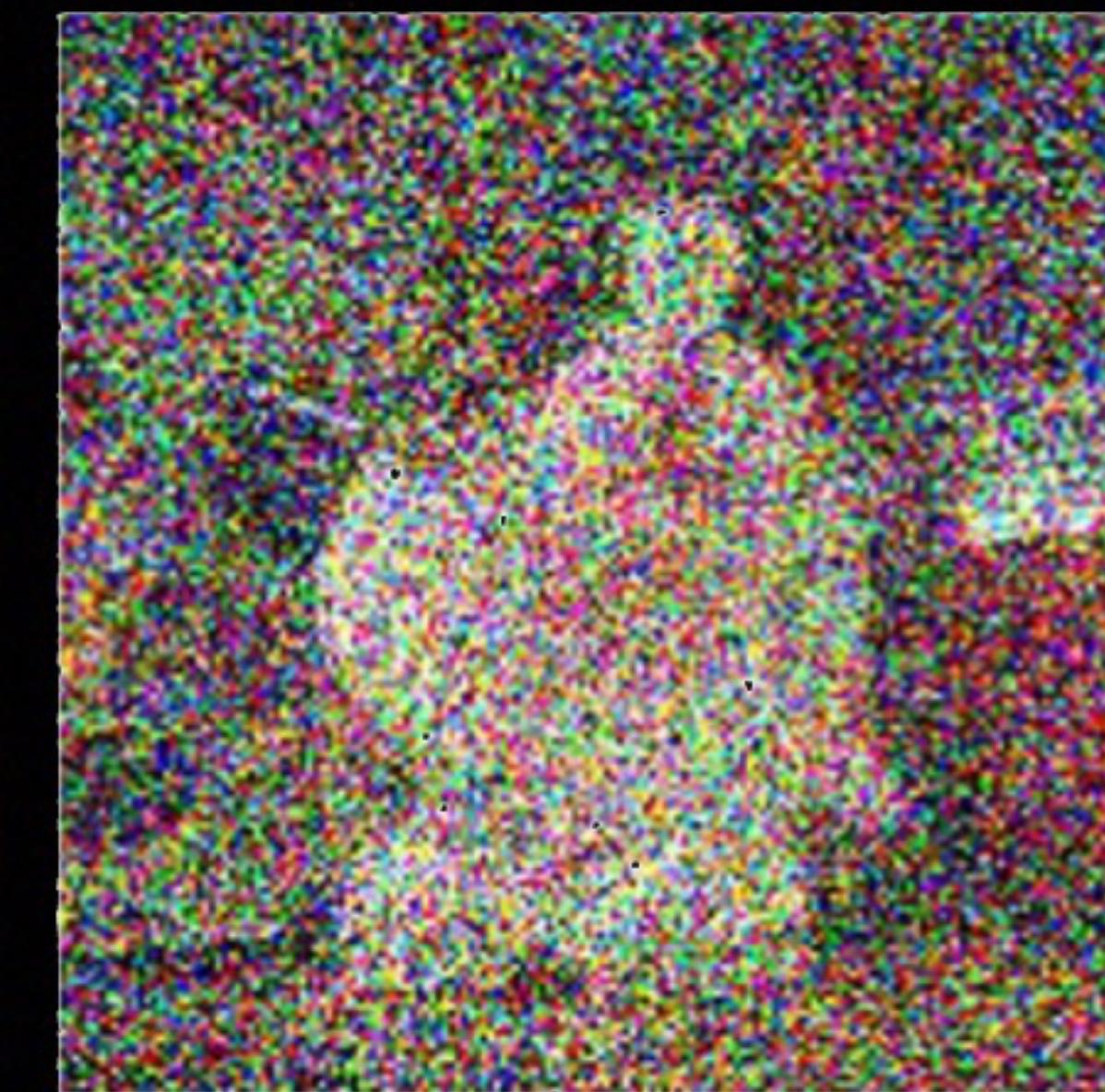
→ Status Quo

Status Quo - Concepts - Diffusion

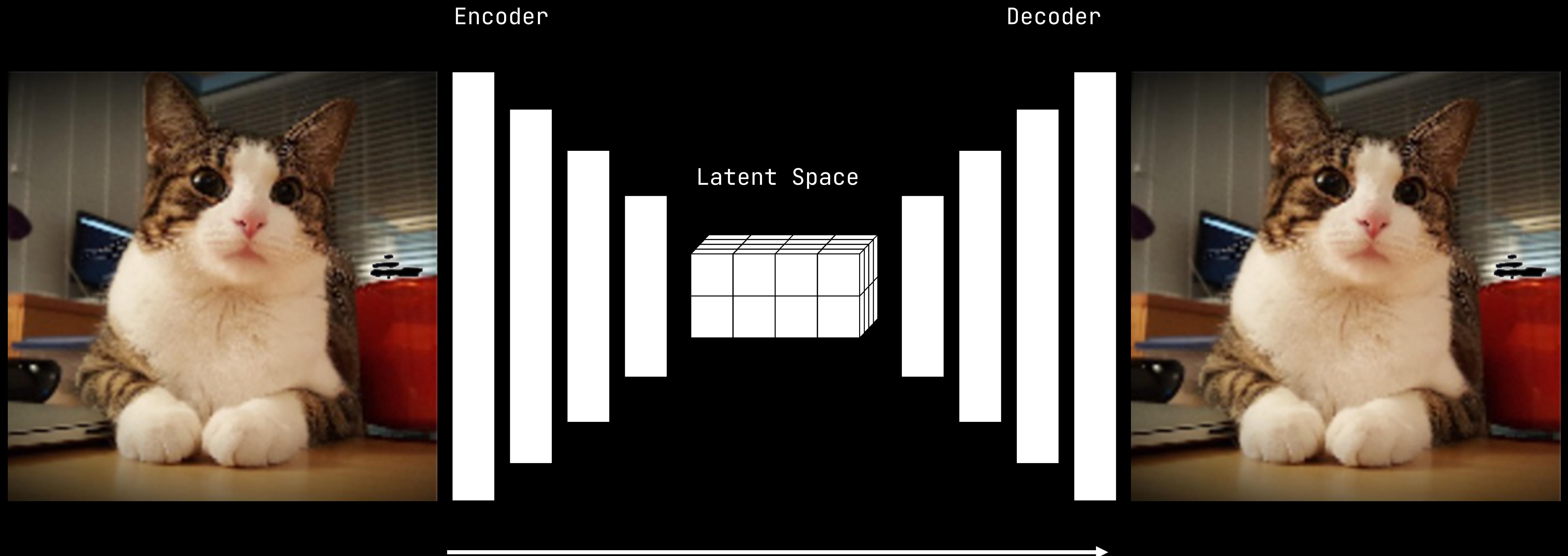




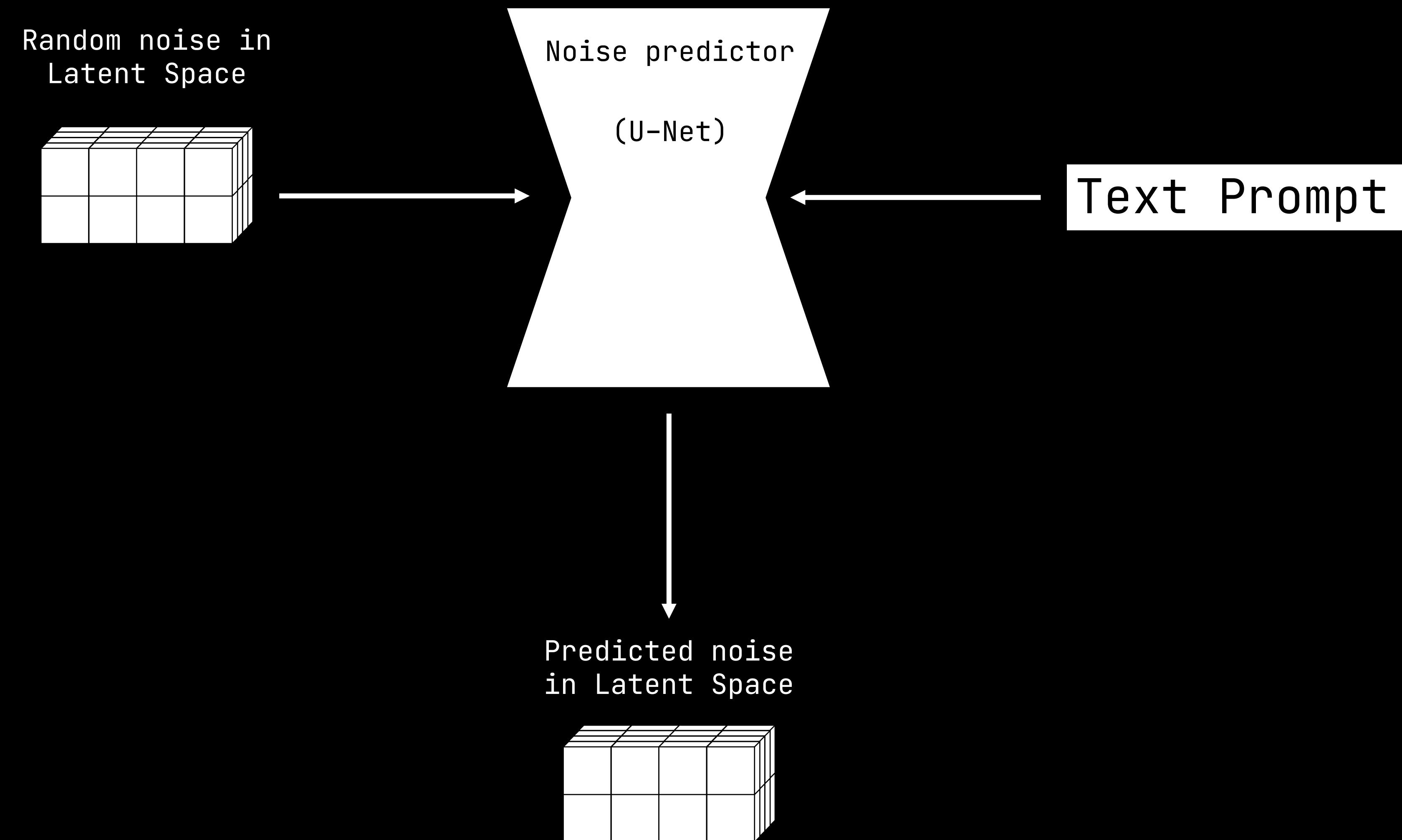
Status Quo - Concepts - Diffusion



Status Quo - Techniques - Encoding



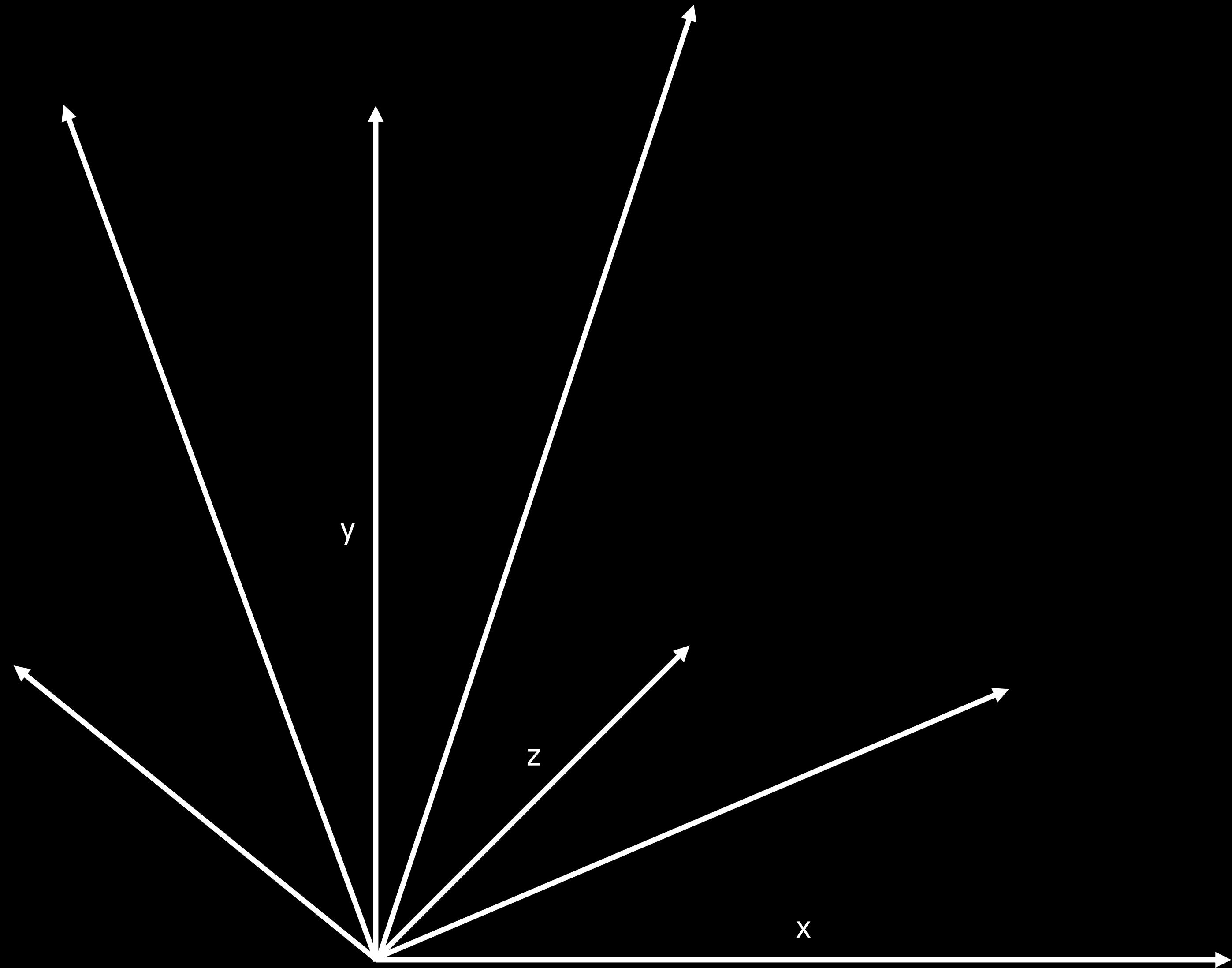
Status Quo - Techniques - Text conditioning



Status Quo - Techniques - Diffusion



Status Quo - Techniques - input - Latent Space (dimensionality)





- “The perceptual relativity argument is that different objects can appear to have different characteristics (e.g. shape) depending on the observer's perspective”

George Berkeley

- Encoding
- Embedding
- Retrieval
- *Compression*

Status Quo - Concepts - Capsule



Status Quo - Concepts

Food101

guacamole (90.1%) Ranked 1 out of 101 labels



- ✓ a photo of **guacamole**, a type of food.
- ✗ a photo of **ceviche**, a type of food.
- ✗ a photo of **edamame**, a type of food.
- ✗ a photo of **tuna tartare**, a type of food.
- ✗ a photo of **hummus**, a type of food.

SUN397

television studio (90.2%) Ranked 1 out of 397 labels



- ✓ a photo of a **television studio**.
- ✗ a photo of a **podium indoor**.
- ✗ a photo of a **conference room**.
- ✗ a photo of a **lecture room**.
- ✗ a photo of a **control room**.

Youtube-BB

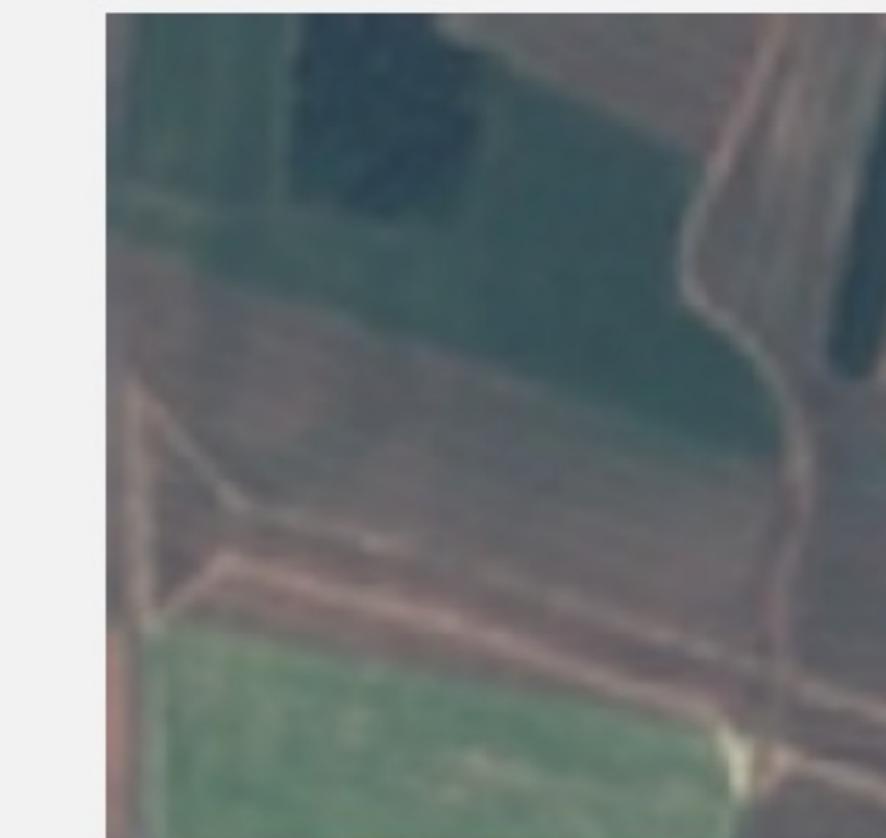
airplane, person (89.0%) Ranked 1 out of 23 labels



- ✓ a photo of a **airplane**.
- ✗ a photo of a **bird**.
- ✗ a photo of a **bear**.
- ✗ a photo of a **giraffe**.
- ✗ a photo of a **car**.

EuroSAT

annual crop land (46.5%) Ranked 4 out of 10 labels



- ✗ a centered satellite photo of **permanent crop land**.
- ✗ a centered satellite photo of **pasture land**.
- ✗ a centered satellite photo of **highway or road**.
- ✓ a centered satellite photo of **annual crop land**.
- ✗ a centered satellite photo of **brushland or shrubland**.

txt2img

img2img

...2img

...2...

Status Quo - Concept - Focus on Image Generation



→ Why we create

- Emulation
- Recognition
- Expression
- Be part of something
- Process
- PASSION





- Access
- Tools
- Inspiration
- Education
- Skills?

→ “Creativity is intelligence having fun.”

Albert Einstein

→ How we create

How we create

NOBODY
STARTS
OUT
ORIGINAL



How we create - Steps

- Research
- Moodboards
- Drafts
- Sketches
- Lofi concepts
- Hifi concepts
- Etc...

We used to search for content that was already created

Now we “create” the content that we’re searching.



How we create - Searching

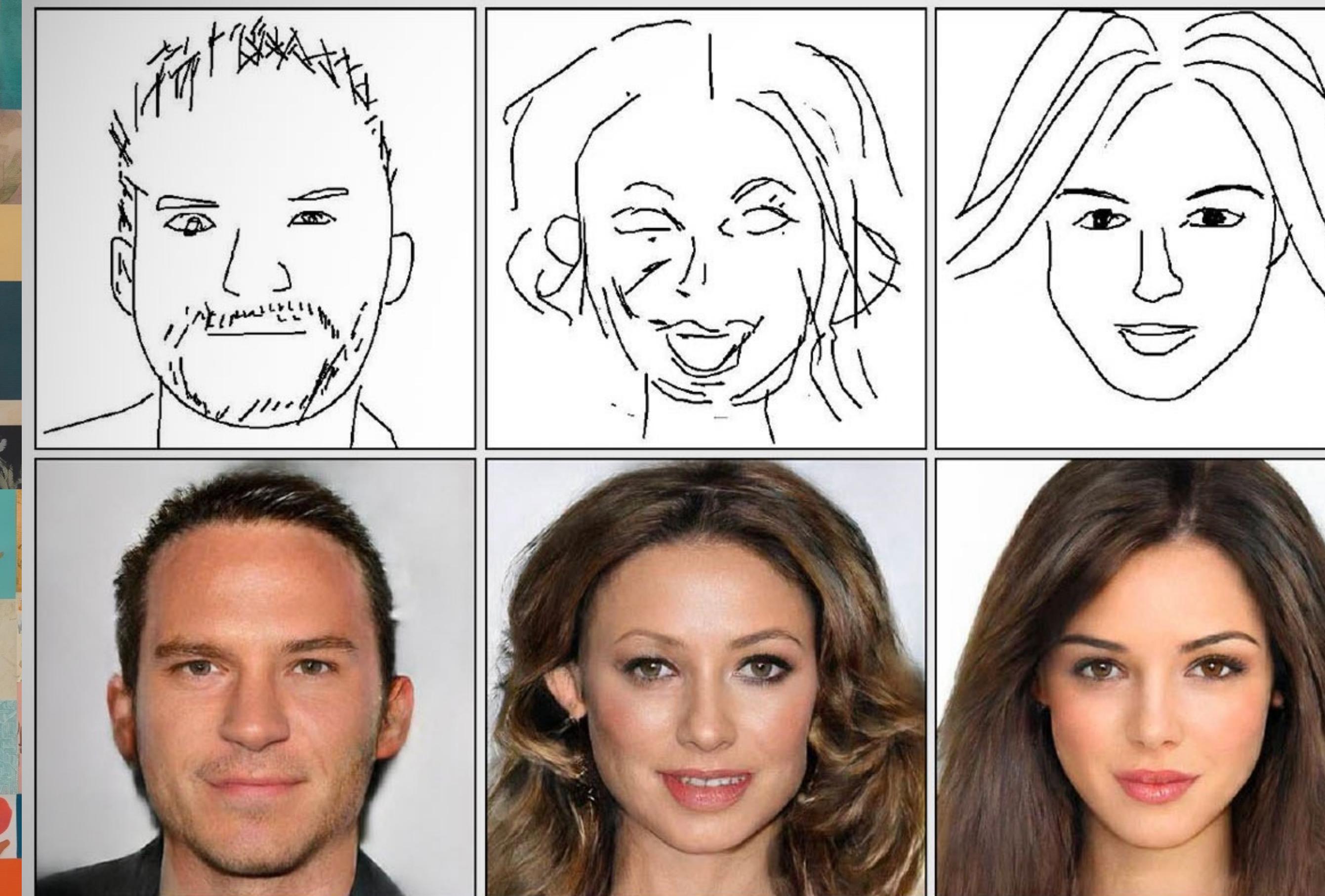


- Research
- Moodboards

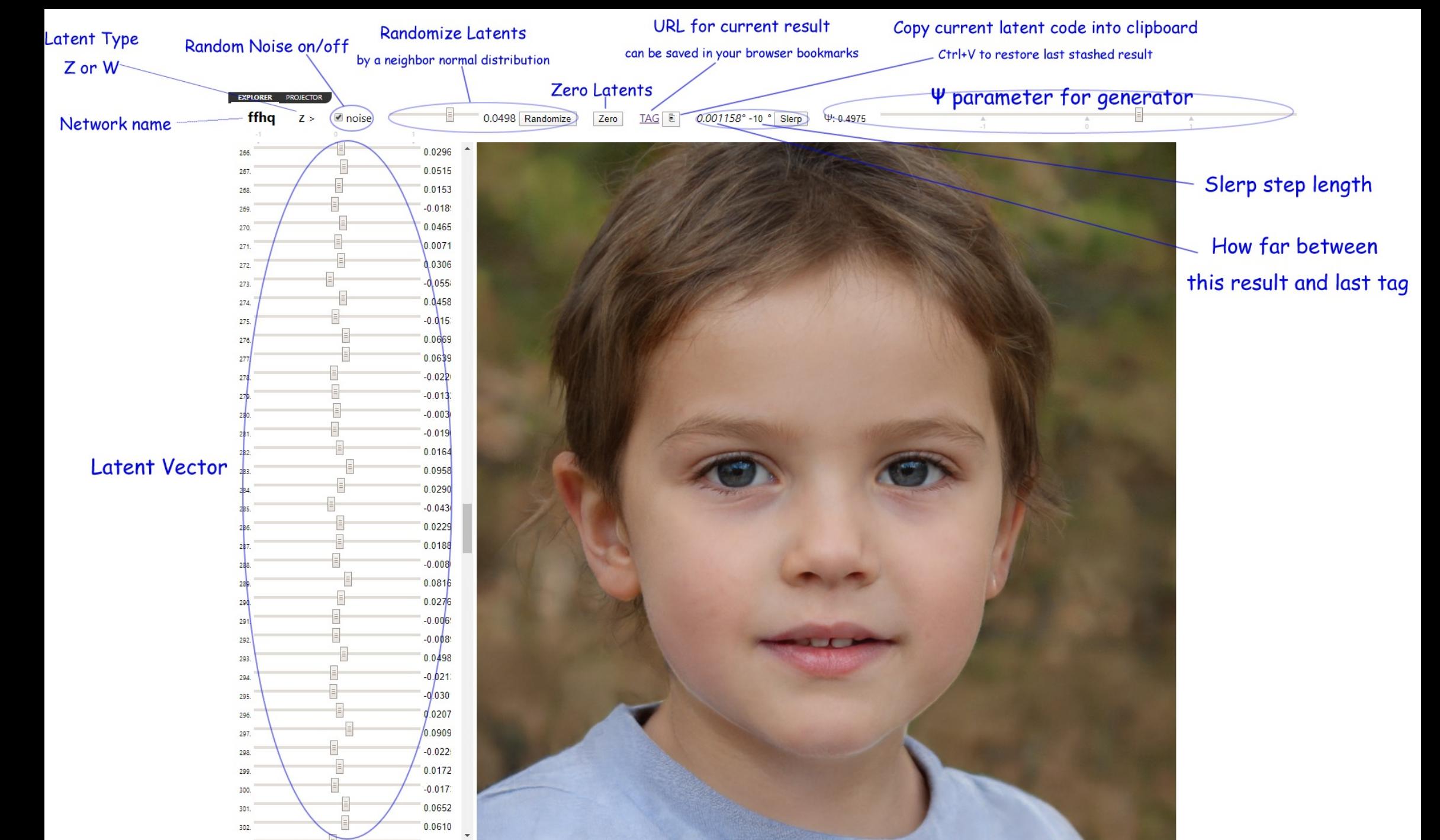
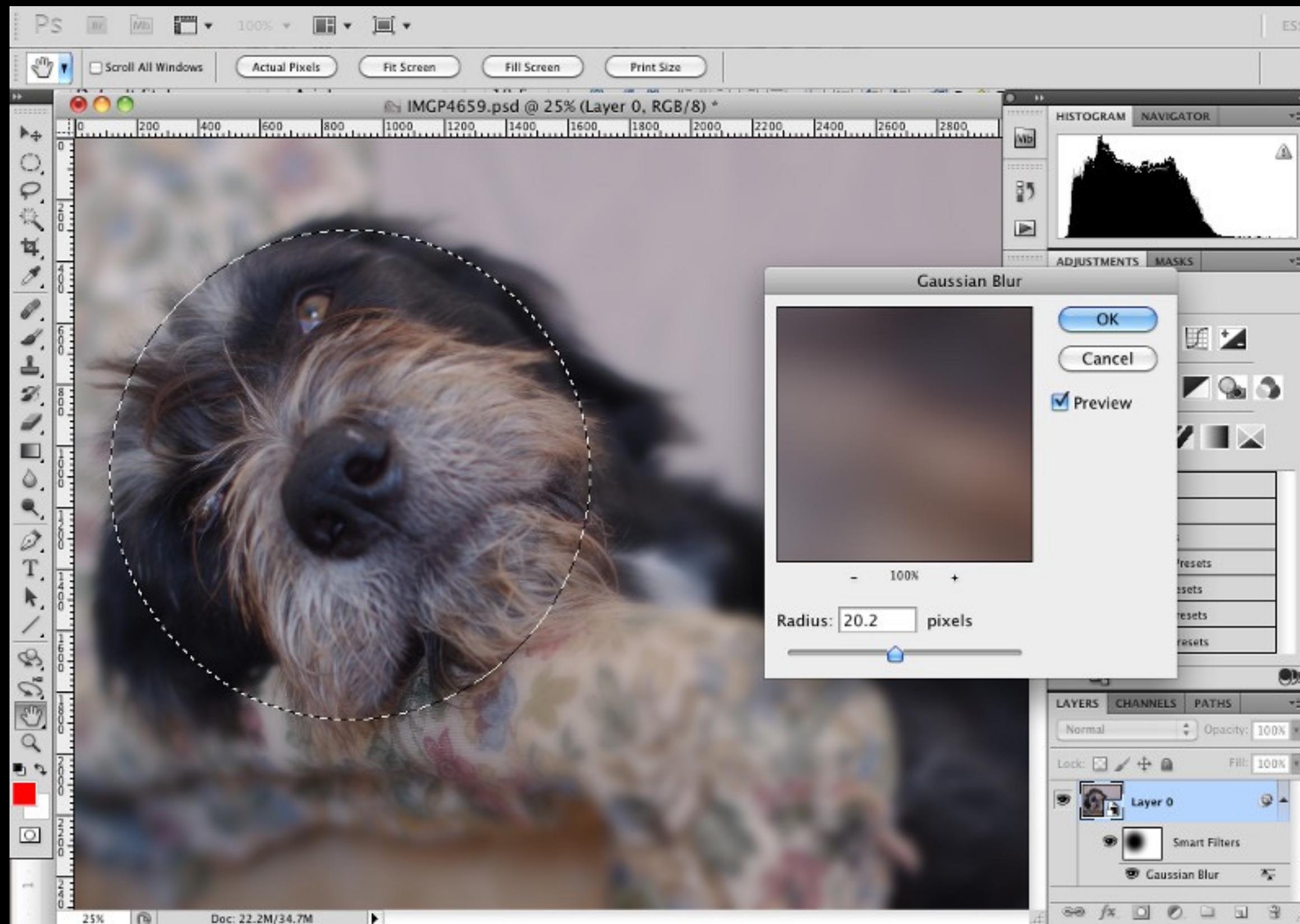


How we create - Merging

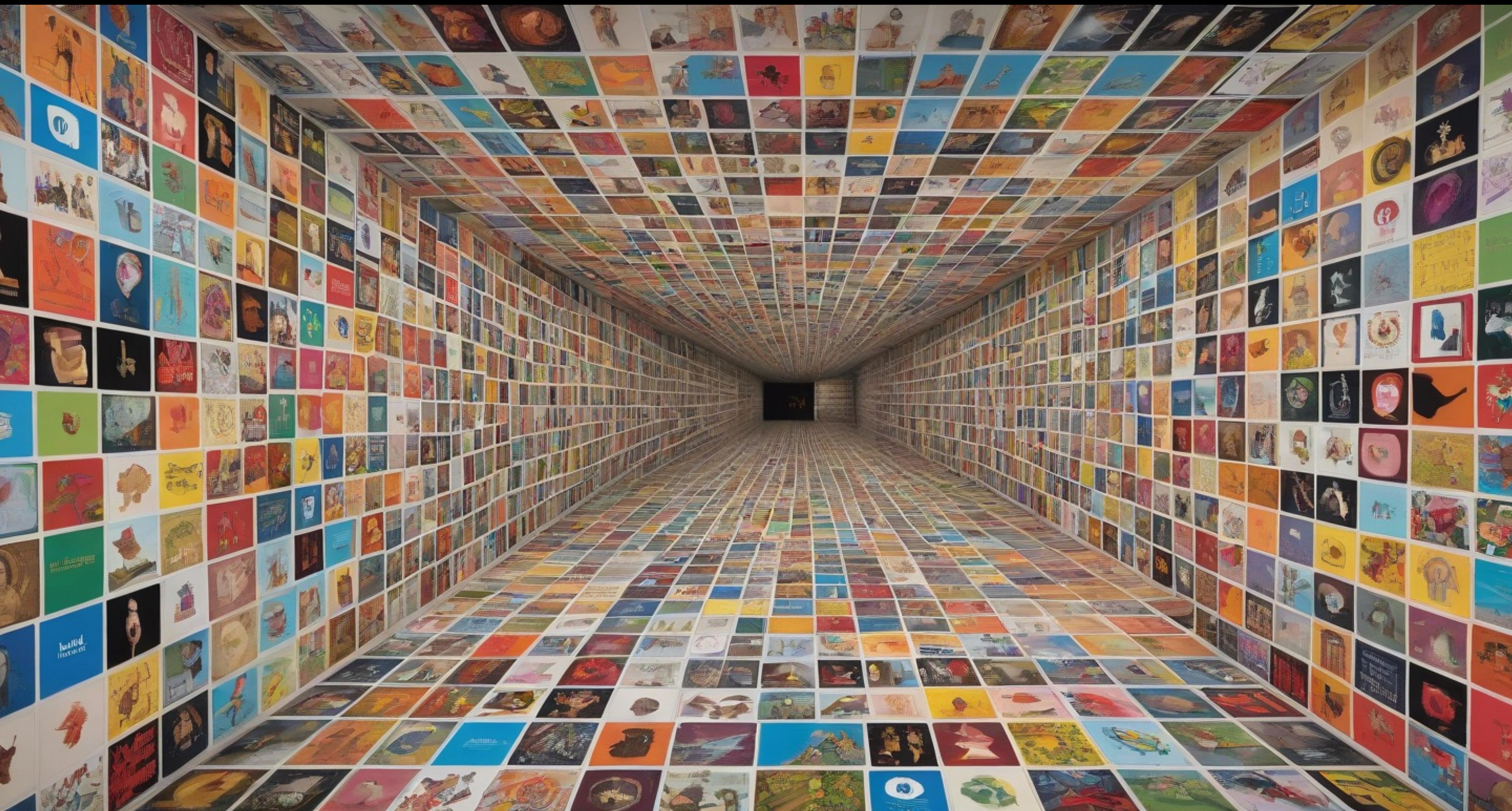
- Drafts
- Sketches
- Lofi concepts
- Hifi concepts
- Etc...



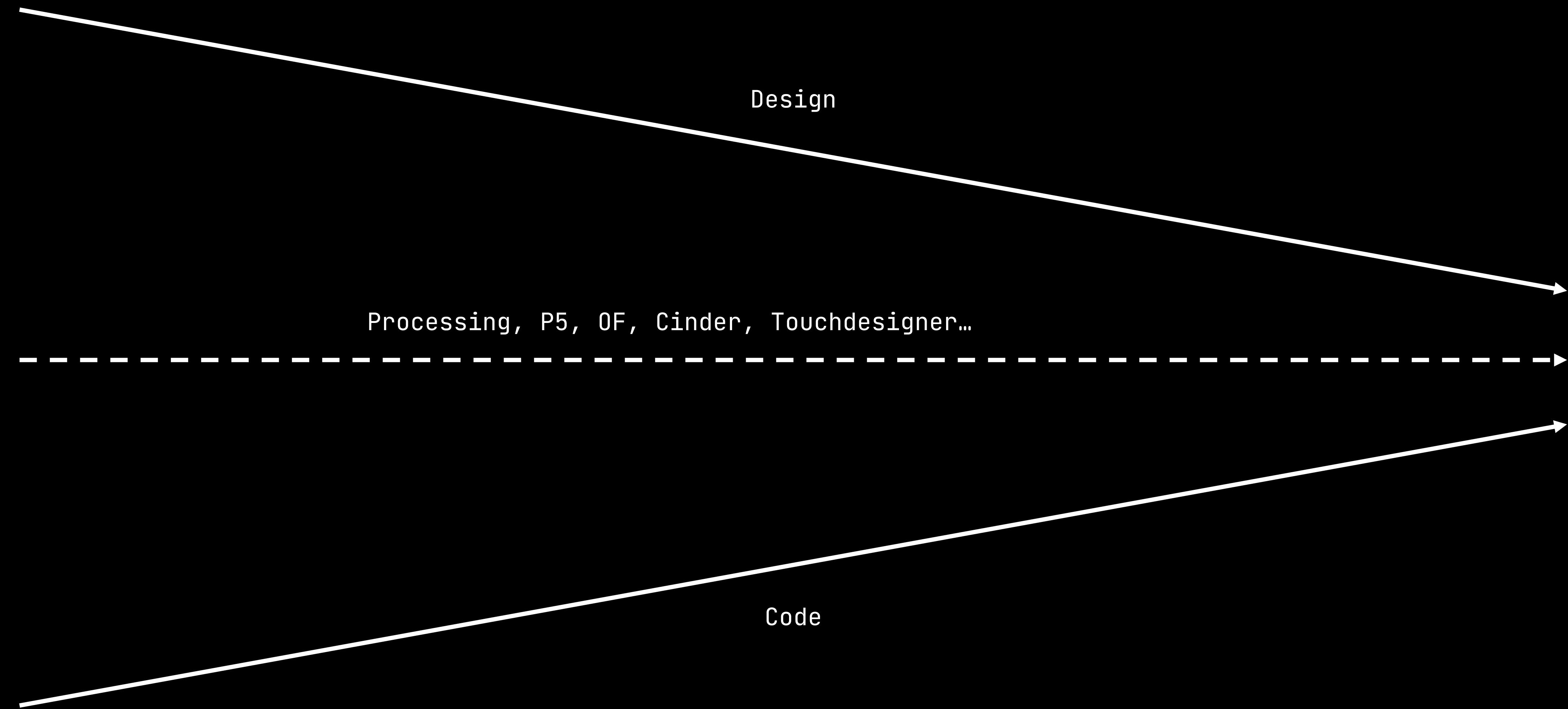
How we create - Choices - Decision Time 🤔



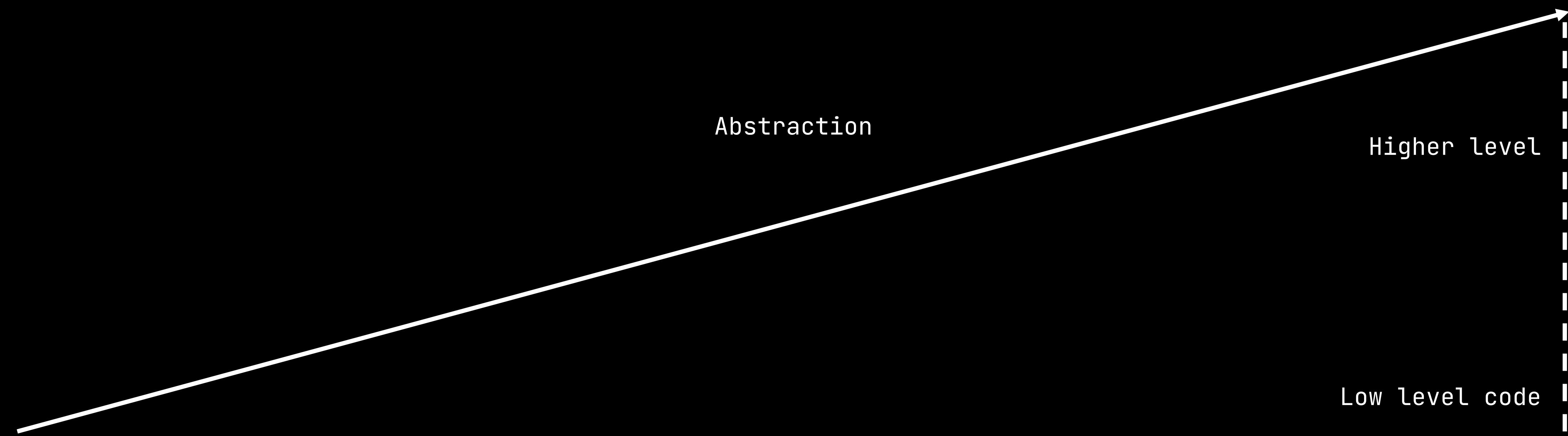
How we create - Choices - Curation

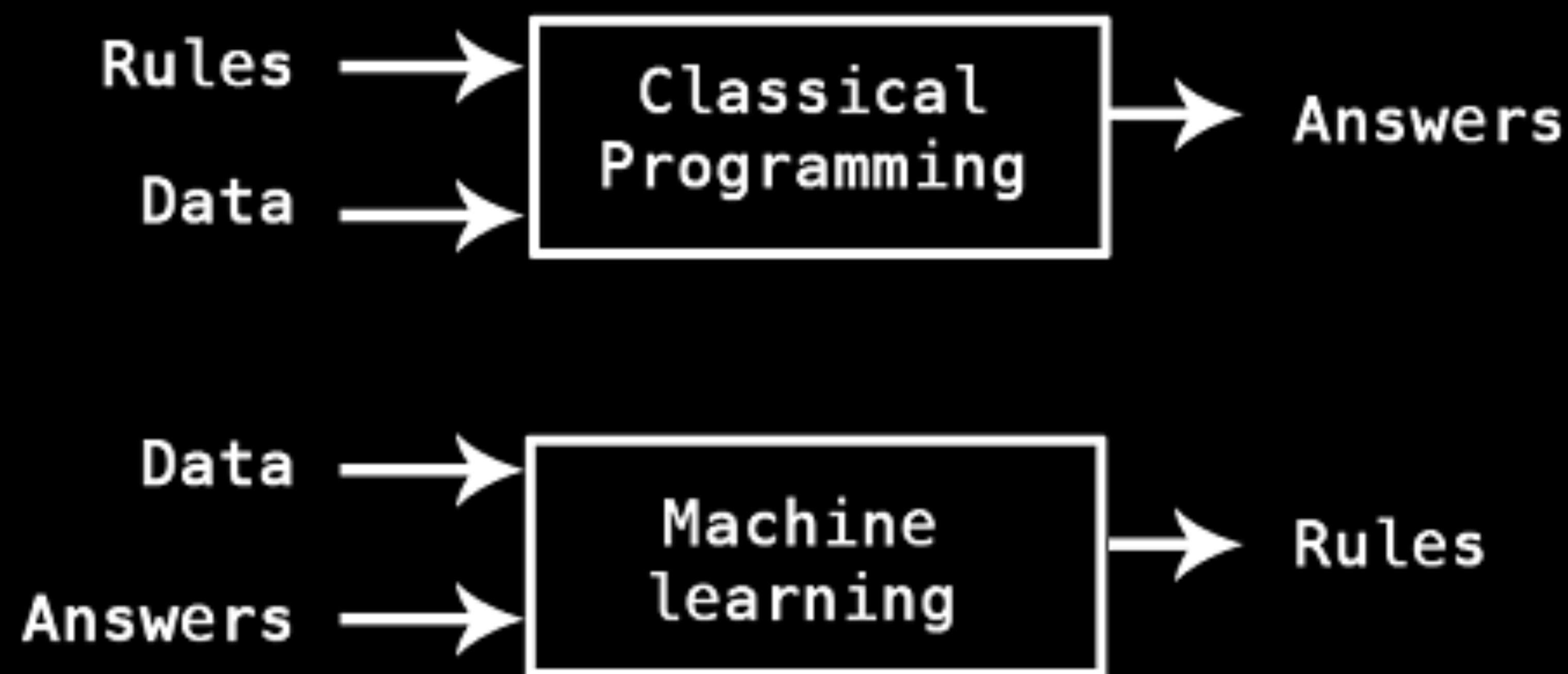


How we create - Creative tools - Evolution

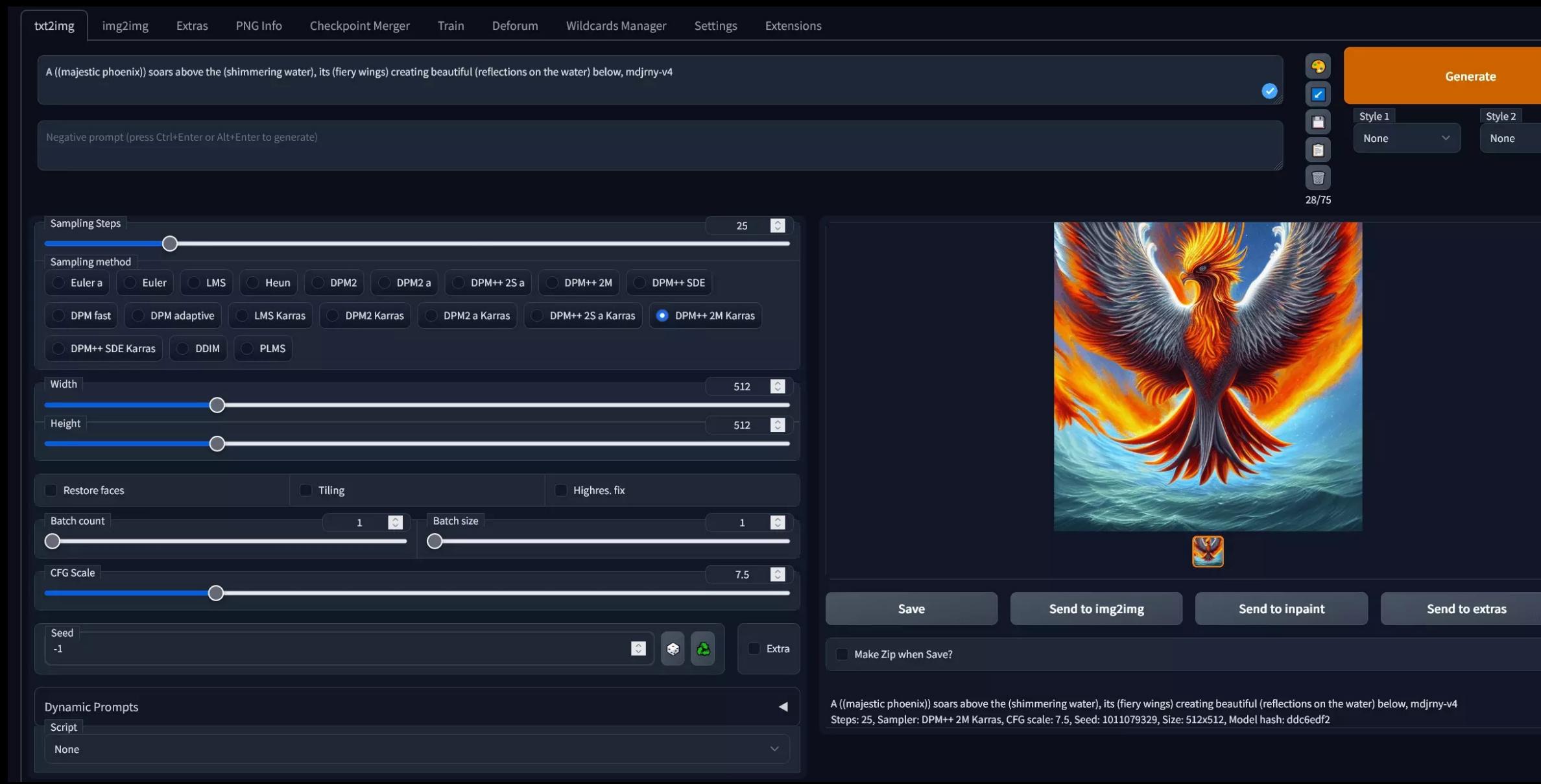


How we create - Creative tools - Abstraction





How we create - Creative tools



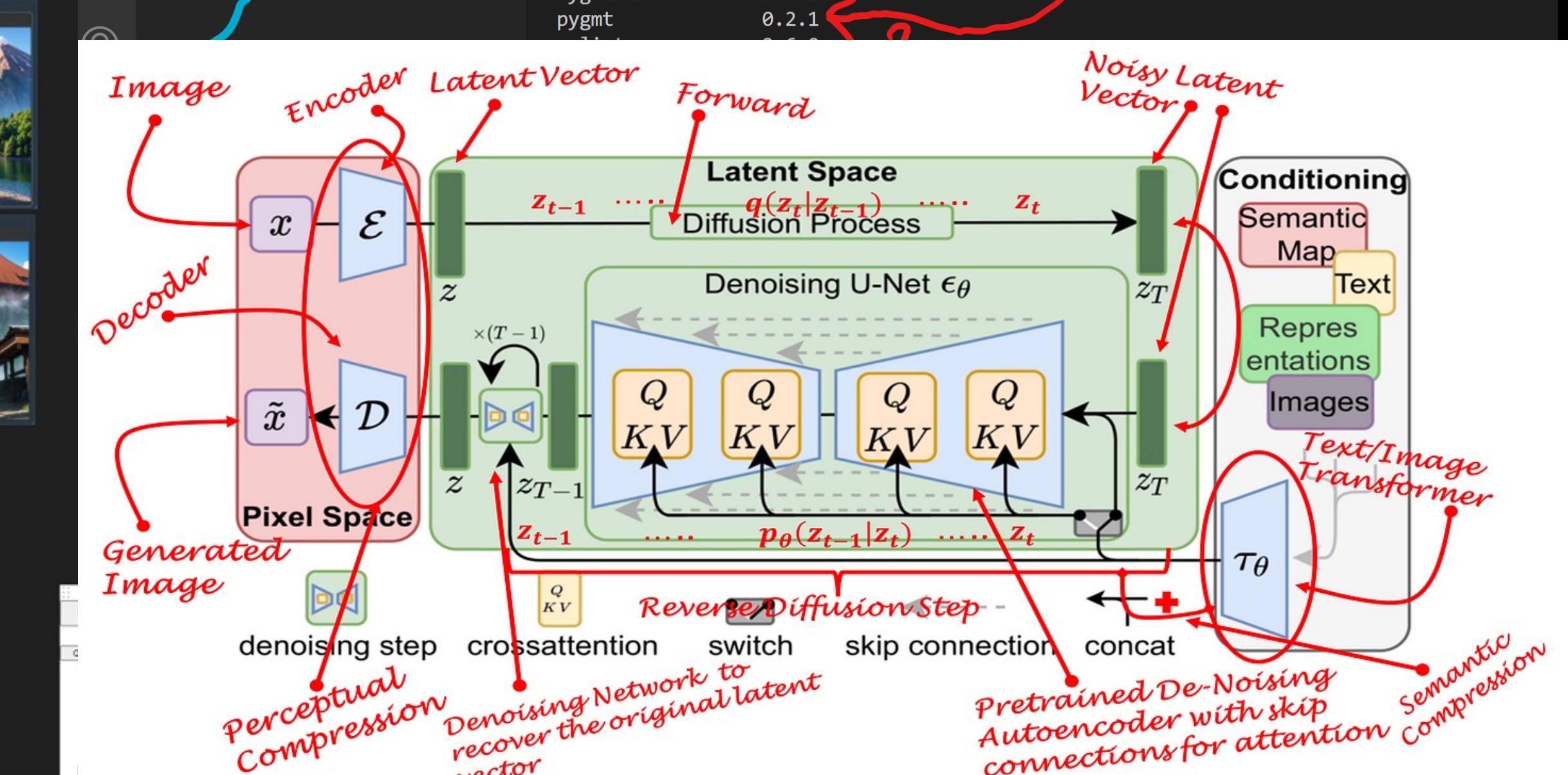
The screenshot shows a Jupyter Notebook interface. The code cell contains:

```
import os
import glob
#test
import sys
print(sys.version)
import pygmt
import pandas as pd
import numpy as np
```

The output shows Python version 3.8.5 and a stack trace for a `ModuleNotFoundError`:

```
3.8.5 (default, Sep 3 2020, 21:29:08) [MSC v.1916 64 bit (AMD64)]
ModuleNotFoundError: <ipython-input-6-7b227eb8c1d7> in <module>
  4 import sys
  5 print(sys.version)
----> 6 import pygmt
  7 import pandas as pd
  8 import numpy as np
```

A red box highlights the error message: "ModuleNotFoundError: No module named 'pygmt'". The terminal tab shows the Pygments package version: "Pygments 2.7.3" and "pygmt 0.2.1".



How we create - To the metal



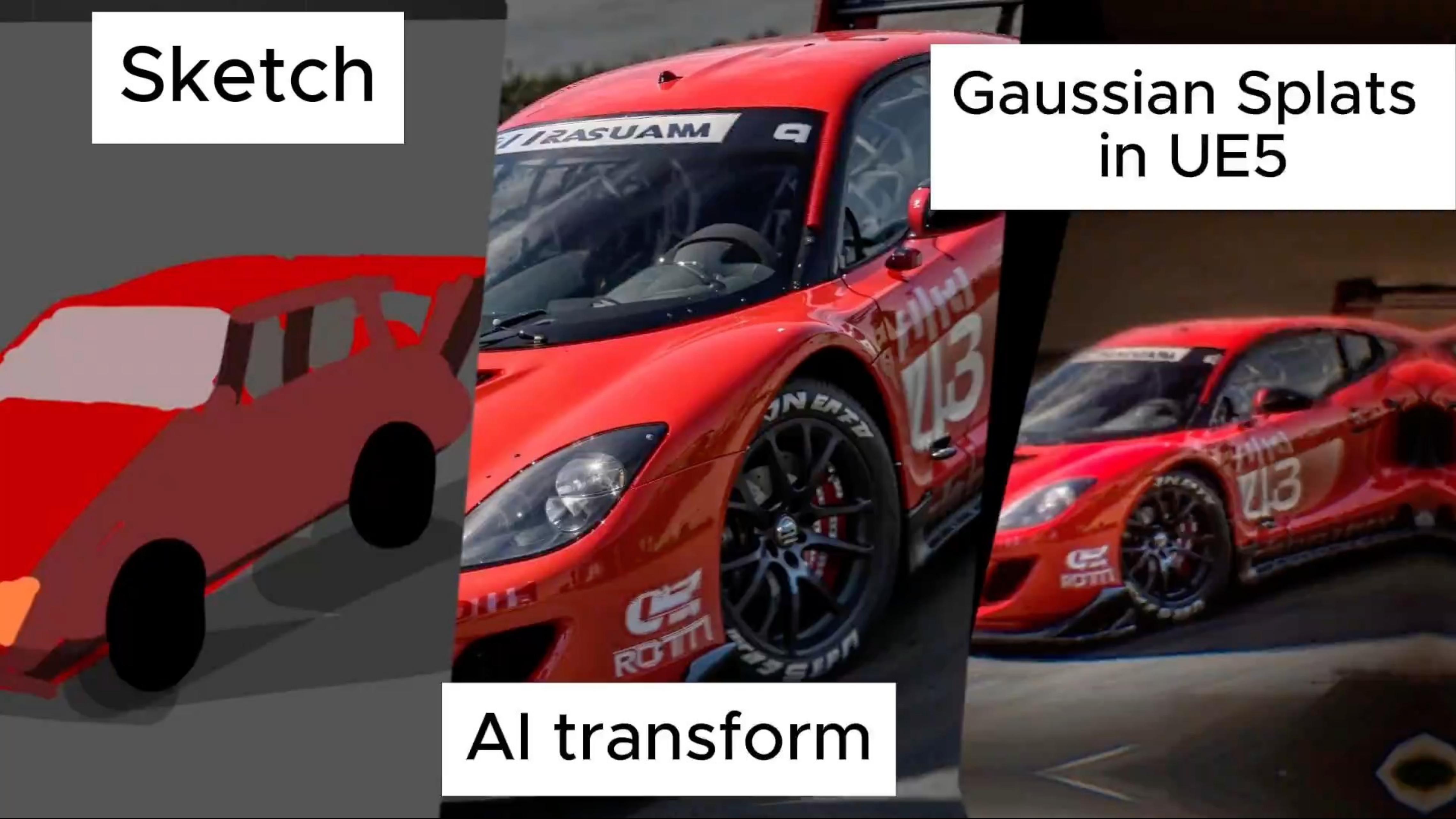
How we create

We are not
Only
A brain...



How we create - Workflow





Sketch

Gaussian Splats
in UE5

AI transform

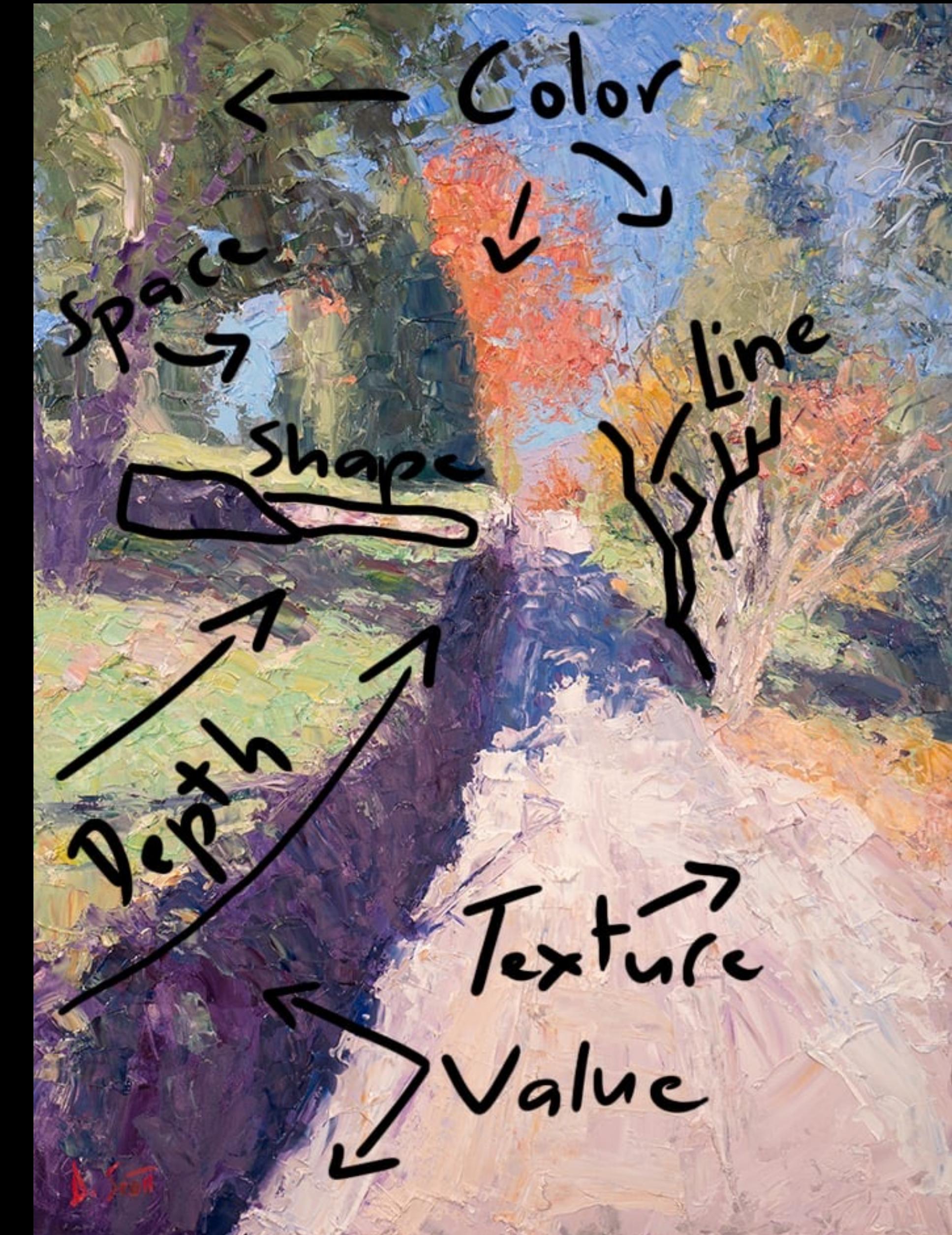
What do I want to say?

How am I going to say it?

How we create - Rules - Composition



- Line
- Shape
- Color
- Texture
- Value
- Space
- Depth



→ “Learn the rules like a pro
So you can break them like
an artist!”

Pablo Picasso



→ The bigger picture

The bigger picture

- Democratised
- Techtopia



The bigger picture

Automation

