

“Standing on top of the highest mountain, looking down to the other peaks, alps.
An award-winning landscape photo of South Tyrol”

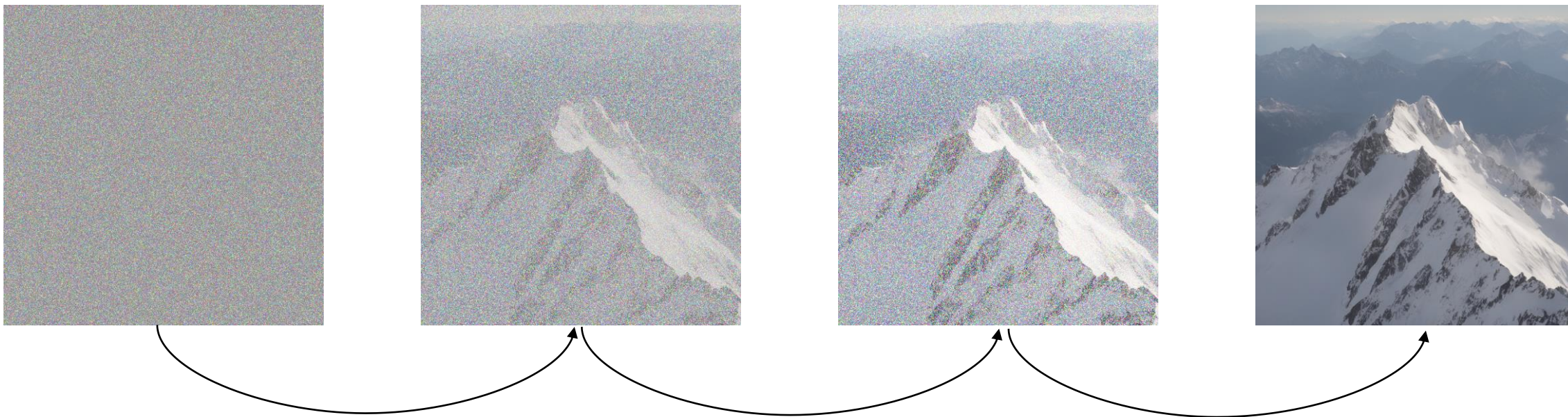
Image Generation with Diffusion Models

How computers imagine our world

Markus Pobitzer

Overview

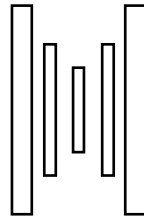
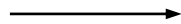
Diffusion Models



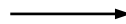
Stable Diffusion (SD)

“Majestic royal ship on
a calm sea, oil
painting, ...”

(Text) Guidance



Stable Diffusion



Output

Inpainting with Stable Diffusion



Input

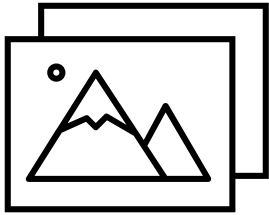


Mask

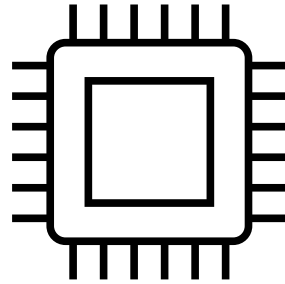


Output

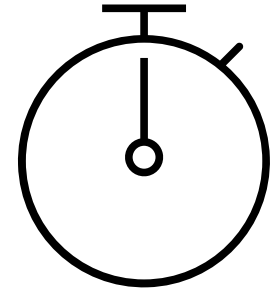
Training Stable Diffusion (v1)



Billions
of Image-Text pairs



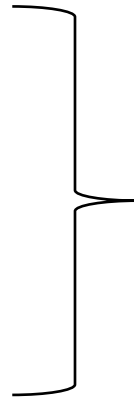
256
Nvidia A100 (40GB) GPUs



150 000
GPU Hours

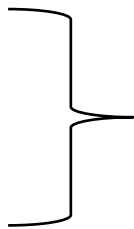
Image Generation Applications

- DALL-E
- Imagen
- Midjourney



unreleased
or
behind API

- Stable Diffusion

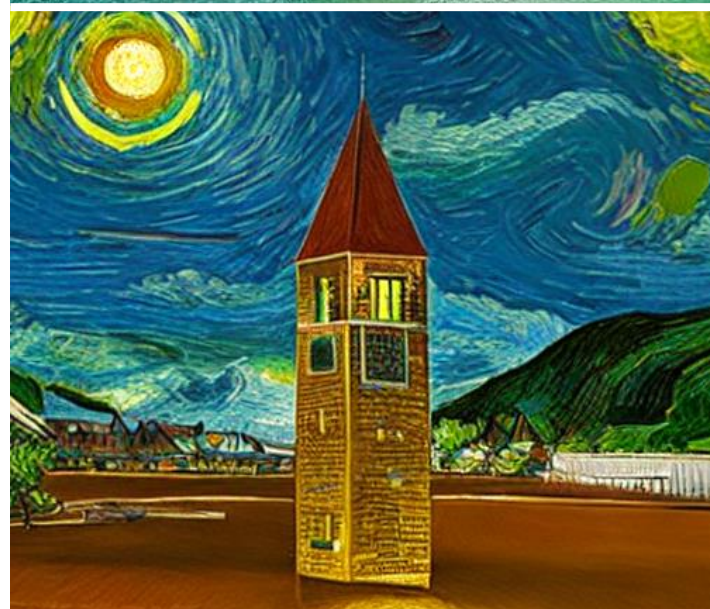


training code
and
model weights
available

Beyond Text Guidance



Input (Edges)



Outputs

Shortcomings



“Sign with SFSCON written on it”

Challenges



Real or Fake?





Try it out!

Generate the image on the left on your device thanks to Google Colab.

Scan the QR-Code or visit:
github.com/Markus-Pobitzer/SFSCON-2023

