Digital humanities

Cvičení: Stable Diffusion

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Stable Diffusion: instalace v Pythonu

```
pip install --upgrade diffusers transformers
accelerate mediapy peft
```

```
import mediapy as media
import random
import sys
import torch

from diffusers import
DiffusionPipeline, TCDScheduler
from huggingface_hub import
hf_hub_download

# Choose among 1, 2, 4 and 8:
num_inference_steps = 8

base_model_id =
"stabilityai/stable-diffusion-
xl-base-1.0"
repo_name = "ByteDance/Hyper-
SD"
plural = "s" if
num_inference_steps > 1 else ""
ckpt_name = f"Hyper-SDXL-
{num_inference_steps}step{plura
l}-lora.safetensors"
device = "cuda"

pipe =
DiffusionPipeline.from_pretrain
ed(base_model_id,
torch_dtype=torch.float16,
variant="fp16").to(device)
pipe.load_lora_weights(hf_hub_d
ownload(repo_name, ckpt_name))
pipe.fuse_lora()
pipe.scheduler =
TCDScheduler.from_config(pipe.s
cheduler.config)
```

```
prompt = "Create an oil painting in the style of Vermeer, showing Emperor Rudolf II reading in a Renaissance library. Focus on his face, a ruff collar, and rich attire, surrounded by dark wood shelves filled with ancient books, under soft natural light."
seed = random.randint(0, sys.maxsize)

# Decrease eta (min: 0, max: 1.0) to get more details with multi-step inference:
eta = 0.5
```

```
images = pipe(
    prompt = prompt,
    num_inference_steps = num_inference_steps,
    guidance_scale = 0.0,
    eta = eta,
    generator = torch.Generator(device).manual_seed(seed),
    ).images

print(f"Prompt:\t{prompt}\nSeed:\t{seed}")
media.show_images(images)
images[0].save("output.jpg")
```

"Draw Holy Roman Emperor Rudolf II as an old man in an anime style in a renaissance library."