Prompt: a tourist place in Abu Dhabi with buildings, realistic, 8K, fantasy

Image generated: **Contextual QR:**

Prompt: a public party all people enjoying together, realistic, 8K, fantasy

Image generated: **Contextual QR:**

Prompt: a good dark background night view, realistic, 8K, fantasy

Image Generated: **Contextual QR:**

Prompt: A fireworks display in the night sky, realistic, 8K, fantasy.

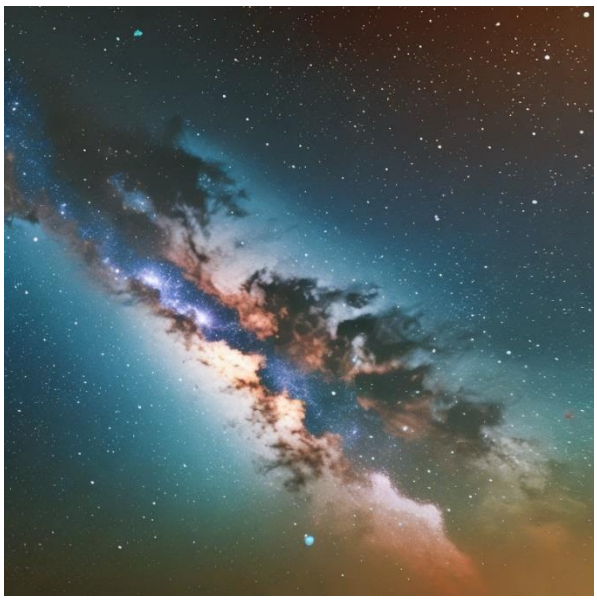
Image generated: **Contextual QR:**

Prompt: a asthetic night background with moon, realistic, 8K, fantasy

Image generated: **Contextual QR:**

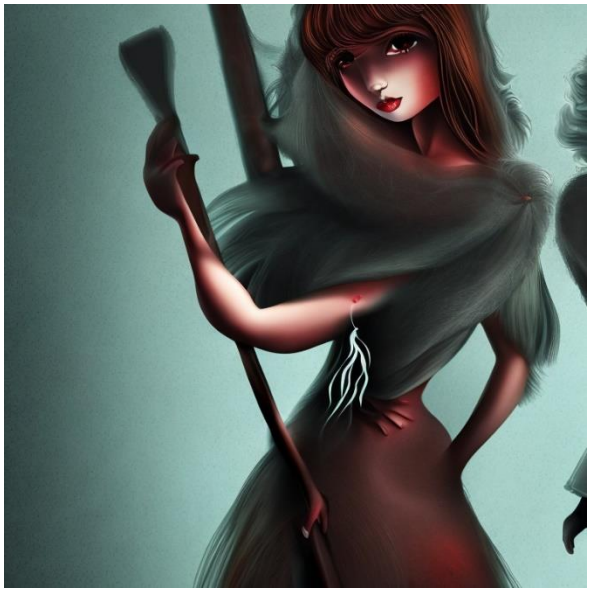
Prompt: A dreamy night sky with stars and galaxies, 8K, fantasy, realistic

Image generated: **Contextual QR:**

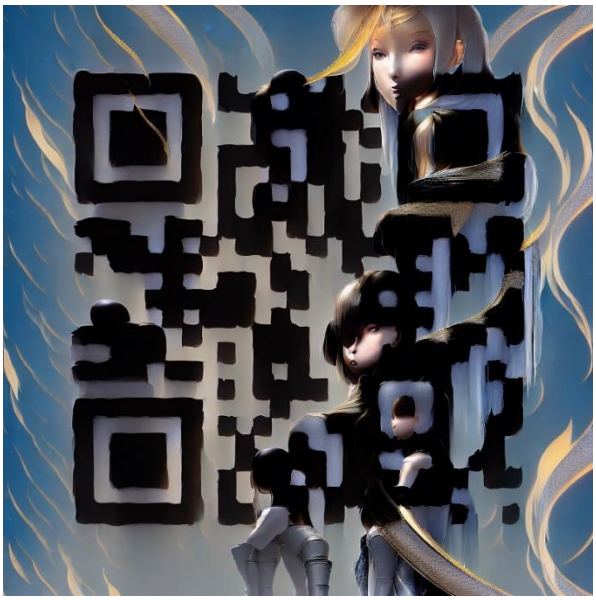


Prompt: A completely black background with a girl and boy, realistic, 8K, fantasy

Image generated:

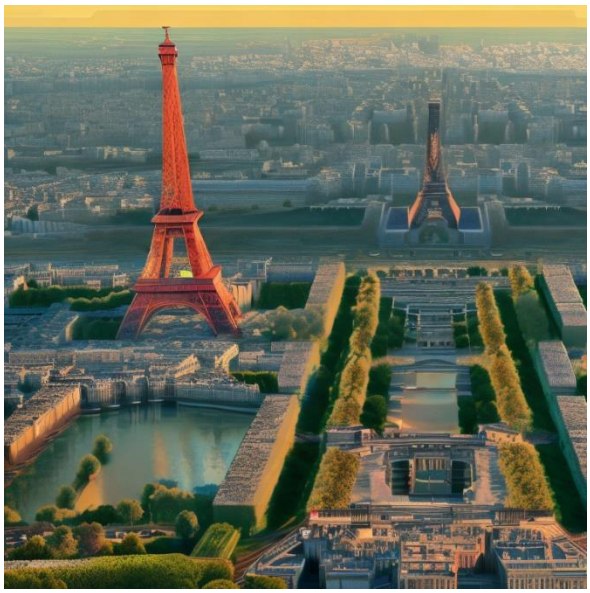


Contextual QR:



Prompt: a place in paris with full eiffel tower, realistic, 8K, fantasy

Image generated:



Contextual QR:

Model Sources:

Control Net Model:

https://huggingface.co/DionTimmer/controlnet_qrcode-control_v11p_sd21

Stable Diffusion Model:

https://huggingface.co/stabilityai/stable-diffusion-2-1

Key Observations:

The pipeline integrating the ControlNet and Stable Diffusion models accepts four primary parameters:

1. **Base Image**
2. **QR Code**
3. **Prompt**
4. **Negative Prompt**

Images are generated within a total time of 79 seconds (18 seconds + 61 seconds) on a GPU T4 with 2.7 GB RAM and a high-performance CPU, such as those available in Google Colab. The model performs well in generating views and artistic content, particularly when provided with precise prompts, such as specifying locations like Paris.

For example, the model generated an image of Abu Dhabi with buildings accurately depicted due to the prompt's specificity. This demonstrates the importance of precise prompting, especially when generating images of specific places.

Parameters:

QR Code:
Generated using the Python library qrcode.

BaseImage:
A text-to-image Stable Diffusion model is employed to create the base image, avoiding color contrast issues and ensuring proper overlay with the generated conceptual QR code image. If a text-to-image pipeline is not used, the user must provide an image, which can increase the time and potentially reduce quality.

Prompt:
The prompt should be detailed and include keywords such as "realistic", "action", "drama", "fantasy", "live", and "HD" to ensure the generation of high-quality images. The more descriptive the prompt, the better the resulting image.

Negative_Prompt:
The negative prompt specifies what should not be included in the image, helping to avoid common issues like disfigurement and low-quality output.

Note:

It is important to note that the model does not generate images with dark backgrounds, ensuring that the QR code remains scannable, as it is rendered in black and white. Additionally, using a text-to-image model can help create backgrounds related to the prompt, such as fireworks or aesthetic moon images.

Hyperparameters of the ControlNet Model

1. **guidance_scale:** 50
2. **controlnet_conditioning_scale:** 3.0
3. **generator:** generator
4. **strength:** 0.9
5. **num_inference_steps:** 150