

# **Exp 8: Reproducing an Image Using Prompts for Image Generation**

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## **Aim:**

To demonstrate the ability of text-to-image generation tools to reproduce an existing image by crafting precise prompts. The goal is to identify key elements within the image and use these details to generate an image as close as possible to the original.

## **Procedure:**

1. **Analyze the Given Image:** ○ Examine the image carefully, noting key elements such as: ■ Objects/Subjects (e.g., people, animals, objects) ■ Colors (e.g., dominant hues, contrasts) ■ Textures (e.g., smooth, rough, glossy) ■ Lighting (e.g., bright, dim, shadows) ■ Background (e.g., outdoor, indoor, simple, detailed) ■ Composition (e.g., focal points, perspective) ■ Style (e.g., realistic, artistic, cartoonish)
2. **Create the Basic Prompt:** ○ Write an initial, simple description of the image. For example, if the image shows a landscape, the prompt could be "A serene landscape with mountains and a river."
3. **Refine the Prompt with More Detail:** ○ Add specific details such as colors, mood, and time of day. For example: "A serene landscape during sunset with purple mountains, a calm river reflecting the colors of the sky, and a few trees along the shore."
4. **Identify Style and Artistic Influences:** ○ If the image has a particular style (e.g., impressionist painting, realistic photography, minimalistic), include that in the prompt. For example: "A serene landscape in the style of a watercolor painting with soft, blended colors."
5. **Adjust and Fine-tune:** ○ Refine the prompt further by adding specific instructions about elements like textures, weather conditions, or any other distinctive features in the image. For example: "A serene landscape during sunset with purple mountains, a calm river reflecting the colors of the sky, a few trees along the shore, and soft, pastel tones in the clouds."

6. Generate the Image: ○ Use the crafted prompt to generate the image in a text-to-image model (e.g., DALL·E, Stable Diffusion, MidJourney).
7. Compare the Generated Image with the Original: ○ Assess how closely the generated image matches the original in terms of colors, composition, subject, and style. Note the differences and refine the prompt if necessary.

## Tools/LLMs for Image Generation:

● DALL·E (by OpenAI): A text-to-image generation tool capable of creating detailed images from textual prompts. ○ Website: DALL·E ● Stable Diffusion: An open-source model for generating images from text prompts, known for its flexibility and customizable outputs. ○ Website: Stable Diffusion ● MidJourney: A popular AI tool for generating visually striking and creative images based on text descriptions. ○ Website: MidJourney

## Instructions:

1. Examine the Given Image: Study the image to understand its key features—objects, colors, lighting, composition, and any stylistic choices.
2. Write the Basic Prompt: Start with a simple description of the primary elements in the image (e.g., "A sunset over a mountain range").
3. Refine and Add Details: Improve the prompt by incorporating specifics like colors, shapes, textures, and style (e.g., "A sunset over purple mountains, with a golden sky and a calm river flowing through the valley").
4. Use the Selected Tool: Choose an image generation model (e.g., DALL·E, Stable Diffusion, or MidJourney) and input the refined prompt.
5. Iterate and Adjust: If the initial result isn't quite right, adjust the prompt further based on the differences observed between the generated and original image.
6. Save and Document: Save the generated image and document your prompt alongside any observations on how the output compares to the original.

## Deliverables:

1. The Original Image: Provided image for reference.
2. The Final Generated Image: The image created using your refined prompt.
3. Prompts Used: The text prompts created during the experiment.
4. Comparison Report: A report highlighting the differences and similarities between the original and generated images, along with any adjustments made to the prompt.

## Conclusion:

By using detailed and well-crafted prompts, text-to-image generation models can be effective in reproducing an image closely. The quality of the generated image depends on how accurately the prompt describes the image's key elements. The experiment demonstrates the importance of prompt refinement and iteration when working with AI tools to achieve desired outcomes. With practice, the model can generate images that closely match real-world visuals, which is useful for creative and practical applications.

## IMAGES: (CHOOSE ANY TWO BELOW AND REPRODUCE)

First image :



Prompt used :

A highly realistic landscape scene of a clear blue river winding through a dense forest of tall evergreen trees, with a single brown bear standing in the shallow water. Snow-capped mountains rise majestically in the background, illuminated by a warm, colorful sunset sky filled with shades of orange, pink, and purple. The soft reflection of the sky and trees shimmers on the calm surface of the river, adding a mirror-like effect. The lighting is natural and warm, creating a serene and tranquil atmosphere with vivid contrast between the cool blues of the water and the warm tones of the sunset. The overall composition emphasizes depth and perspective, with fine details and realistic textures in the trees, water, and mountain snow.

AI generated image :



Second image:



Prompt used :

A realistic close-up photograph of an orange tabby cat with white paws and a white chest, calmly sitting on a narrow brick wall in front of a house. The cat's fur is short and smooth, with visible orange stripes and soft texture illuminated by natural daylight. Behind the cat are two doors—one deep green and one black—with a section of light brown brick wall in between, showing clear urban textures. The lighting is bright and natural, highlighting the cat's face and giving subtle shadows along the wall. The composition is centered on the cat, with shallow depth of field emphasizing its calm, confident expression. The style is photorealistic, sharp, and detailed, capturing a quiet everyday street moment.

AI Generated image :



## Comparison Report

In this experiment, two original images—a mountain landscape with a river and bear, and an orange tabby cat on a brick wall—were reproduced using text-to-image generation. The goal was to observe how accurately the generated outputs matched the originals in terms of subject, color, texture, and composition.

For the **landscape image**, the generated result closely matched the original in overall composition and mood. The snow-capped mountains, the bear in the river, and the evergreen forest were accurately recreated. The color palette was particularly successful, capturing the warm tones of the sunset sky with orange, pink, and purple hues reflecting beautifully on the river. However, some slight differences were noted—the mountain shapes and cloud formations varied, and the bear's position and size were slightly altered. Despite this, the lighting and reflection effects were realistically maintained, conveying a similar tranquil atmosphere. No major prompt adjustment was required beyond specifying “realistic texture and reflection.”

In the **cat image**, the AI-generated version was remarkably close to the original in terms of subject detail and composition. The orange tabby cat with white paws and chest appeared in the same pose, positioned on the brick wall with an expression of calm confidence. The background elements—green and black doors with brick textures—were accurately captured. The lighting and color tones were nearly identical, giving a natural daylight effect. Minor differences were observed in the fur pattern and facial expression, as well as the exact texture of the bricks. The AI rendered a slightly smoother finish, making the image appear more polished than the original.

Overall, both generated images effectively reproduced the main elements and atmosphere of the originals. The small discrepancies mainly involved texture precision and minor compositional variations. This experiment demonstrates that with precise and descriptive prompts, text-to-image AI tools can produce results that are visually and stylistically very close to real-world photographs.