

AI Image Generation Assignment

1 Objective

Generate nine unique, high-quality images of three Indian locations—**Bandra–Worli Sea Link (Mumbai)**, **Hawa Mahal (Jaipur, Rajasthan)**, and the **Nagpur rain-forest**—using only open-source models. Each location is represented with three distinct images capturing different angles, lighting conditions, and atmospheres.

2 Reference Collection

Reference photographs for each location were gathered from publicly available sources to guide prompt engineering and to ensure visual accuracy for every landmark or landscape.

3 Tools & Models

- Google Colab with GPU runtime
- Hugging Face `diffusers` library with Stable Diffusion v1.5
- Python scripting for automated generation and seed control
- Real-ESRGAN for high-resolution upscaling of selected outputs

4 Workflow / Pipeline

1. Wrote detailed prompts describing camera angles, times of day, and visual style.
2. Set up Stable Diffusion on Google Colab using the Hugging Face `diffusers` library.
3. Generated large batches of images with varying random seeds to ensure uniqueness.
4. Reviewed outputs and selected the best three images for each location.
5. Upscaled the nine final images to 1024×1024 pixels.
6. Packaged the images, prompts, and seeds for reproducibility.

5 Model Settings

Stable Diffusion was run with:

- Guidance scale: 7.5
- 30 inference steps
- Output resolution: 1024×1024 pixels
- Random seeds recorded for every final image

6 Prompts and Seeds

Table 1 lists the final nine images, their exact prompts, and the random seed used for reproducibility. Replace the example text and numbers with your actual prompts and seeds.

Table 1: Final prompts and seeds for each submitted image.

Image	Prompt (summary)	Seed
Bandra–Worli Sea Link		
sea_link_1	Aerial drone shot at golden hour, cinematic	42
sea_link_2	Side coastline view, midday, clear sky	1234
sea_link_3	Night long-exposure with light trails	2025
Hawa Mahal		
hawa_mahal_1	Front façade at golden hour, warm sandstone texture	3141
hawa_mahal_2	Wide-angle street view, bright daylight	2718
hawa_mahal_3	Close-up of windows and carvings, shallow depth of field	1618
Nagpur Rainforest		
rainforest_1	Dense rainforest, misty morning, lush green foliage	5150
rainforest_2	Trail through rainforest with thick canopy, damp soil	6174
rainforest_3	Waterfall hidden inside rainforest, cinematic lighting	7201

7 Results

Figures 1, 2, and 3 show the final selected images. Store your PNGs in a folder named `images` next to this L^AT_EX file and rename them to match the placeholders below.



Figure 1: Bandra–Worli Sea Link: three distinct perspectives.

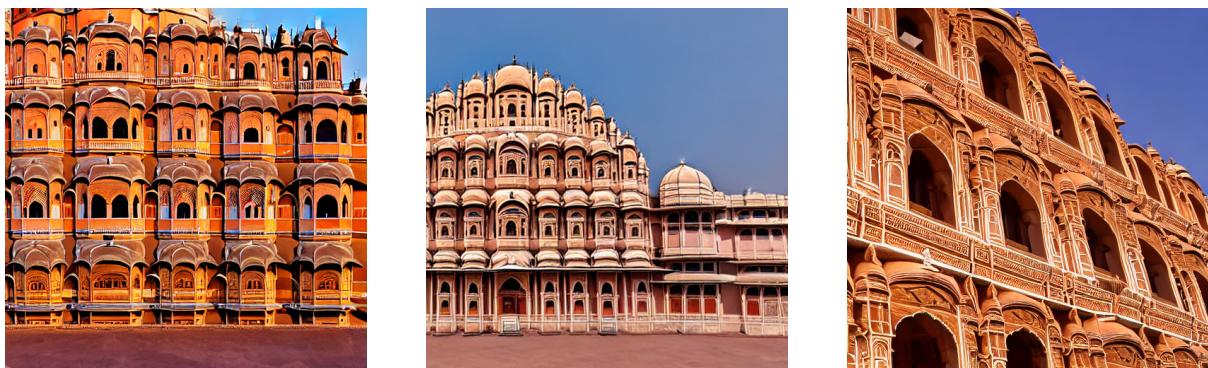


Figure 2: Hawa Mahal: three distinct perspectives.

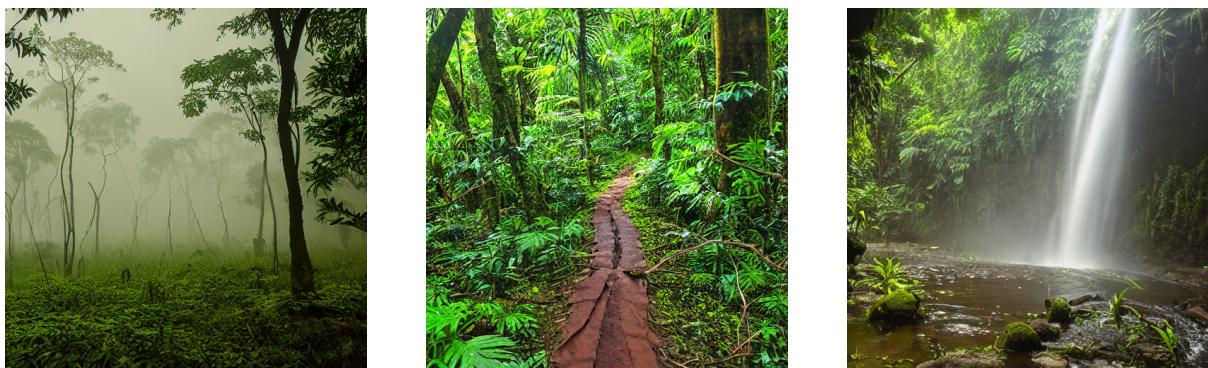


Figure 3: Nagpur rainforest: three distinct perspectives.

8 License and Notes

All images were generated using open-source software and are original outputs of this workflow. The prompts and seeds listed above guarantee full reproducibility.