

AI Project

Gate Design Using AI

Client Requirements:

The client was requesting a design for a gate of a factory. The factory is to be visited by important personnel. The client requested that the gate be grand, reflect Egypt's heritage and show elements of Ancient Egypt.

1-Research using AI

Based on the client Requirements a research has been conducted using Gemini (Large language Model: LLM similar to ChatGBT). Here is the prompt that was used to conduct this research:

Prompt: Can you tell me about the architecture of Ancient Egypt? What elements did they repeatedly use in their Architecture?

Gemini's Output :

Columns: decorated with hieroglyphs or designs resembling papyrus plants, palm trees, or lotus flowers.

Hieroglyphs and Reliefs: Ornate carvings and paintings depicting religious and royal themes.

Symmetry and Monumentality: Symmetrical Buildings/Structures, reflecting the order and stability of the Egyptian worldview.

Why Gemini not ChatGBT? :

Cultural Authenticity : Gemini relative to ChatGBT is known to produce more culturally authentic answers and not to be Biased.

Multimodel AI: Gemini is a Multimodel AI It can understand not only text, but photos and speech which makes it easier to convey the message.

2-Prompt Engineering

After conducting the research we need to create an effective prompt and use it to generate the design. To generate a meaningful design, it is important for the prompt to be detailed and to serve the purpose of the design. That is where Prompt Engineering comes to play; There are many frameworks that are recommended to create an effective prompt. Here is the framework I used for the purpose of this design:

Prompt Framework : [Persona][Task][Context][Exemplar]

Prompt Created Based on Framework :

Imagine that you are an architect generate a prompt to be used by AI photo generator to create a modern version of a pharaonic gate that would be visited by important personnel. Use your answer to my previous prompt (research on architecture of ancient Egypt & its elements) to create the prompt.

Persona: Imagine you are an architect

Task: generate a prompt to be used by AI photo generator

Context: modern pharaonic gate to be visited by important personnel

Exemplars: use your answer to my previous prompt

3-Photo Generation

After asking Gemini to create a prompt, It is time to use the generated prompt to create the design using AI photo generator. For the purpose of this design I used Adobe Firefly. To generate the photo effectively I used three elements:

Structure Photo

Reference photo

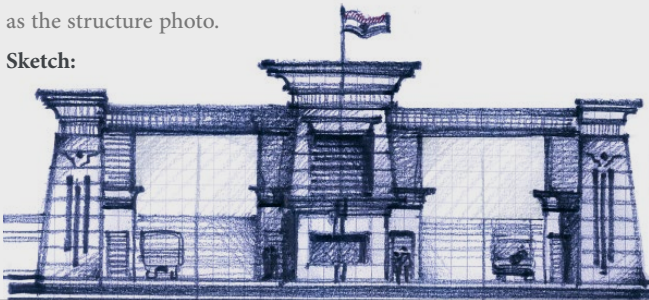
Prompt

Here is how I used these elements:

Structure photo :

The structure photo is a photo that shows the outline and the base of the design. For this design, I used a sketch created by a colleague as the structure photo.

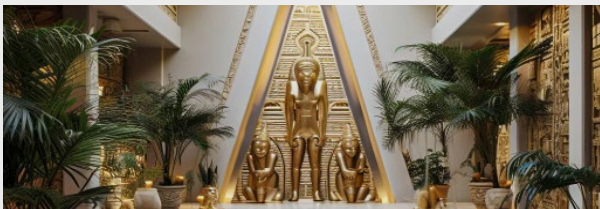
Sketch:



Reference photo :

The reference photo is a reference for the style the generated photo should have. For this design, I used a photo showing style of modern pharonic Interior.

Photo of modern pharonic interior:



Prompt :

For the prompt I used the prompt that was created by Gemini as a result of my Research and Prompt Engineering.

Prompt Generated to be used in AI photo generator:

A modern version of a pharaonic gate, that is imposing and symmetrical. Massive papyrus reed columns flank the entrance, adorned with intricate hieroglyphs depicting scenes of pharaohs. The gate is bathed in the warm glow of the setting sun, casting long shadows across the hieroglyphs. The gate has the flag of Egypt waving on top. The are palm trees paving the way towards the gates.

After using these 3 elements in adobe firefly the output design is generated. Here is the output design:

4-Photo Enhancement

Photo enhancement is an essential part when generating photos using AI. As observed the photo generated using Adobe Firefly is not exactly perfect. Here are the problems in the generated photo:

Low Detail

Weird Sticks

No Palm Trees



Here is how I resolved these problems:

Low Detail :

The low detail can be observed in the hieroglyphs and reliefs in the generated photo. To resolve this problem I used Krea AI (a program that enhances detail).

Photo After Enhancement:

Weird Sticks & No Palm Trees :

The weird sticks existing in the entrances of the gate as observed in the photo make no sense. Also the palm trees were not generated. To resolve this problem, Photoshop Beta (AI Enhanced) was used.

Photo After Enhancement & Final Output:

Programs Used:



Gemini



Adobe Firefly



Krea AI



Photoshop Beta