

Special Topics: Generative AI in Architectural Design

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Learning Objectives

- See how it can be applied in architectural workflows
- Try out a prompt-based design generation exercise

What is Generative AI?

- Generative AI doesn't just analyze—it creates new content
- It can generate:
 - Images (DALL·E, Midjourney)
 - Text (ChatGPT)
 - Music (Suno)
 - Video (Sora)
 - 3D shapes (NeRFs, ShapeGAN)
 - Architectural plans and concepts!

Generative Models

- Imagine a sponge soaking up thousands of design examples
- Later, it “squeezes out” new designs by blending what it learned
- These are not copied—they’re **recombination of learned patterns**
 - **GANs** (Generative Adversarial Networks): Two AIs compete, one draws, the other critiques
 - **Diffusion Models**: Start with noise and gradually “sculpt” a design
 - **LLMs** (Large Language Models): Understand and generate based on prompts (text → image)

Prompt Demo

- Use a tool like ChatGPT 4o, DALL·E and Midjourney:
 - ❖ Prompt 1: “A futuristic library shaped like a spiral”
 - ❖ Prompt 2: “A sustainable village made from bamboo”

Prompt Demo

- Use a tool like ChatGPT 4o, DALL·E and Midjourney:
 - ❖ Prompt 1: “A futuristic library shaped like a spiral”
 - ❖ Prompt 2: “A sustainable village made from bamboo”

Create image A futuristic library shaped like a spiral

Image created



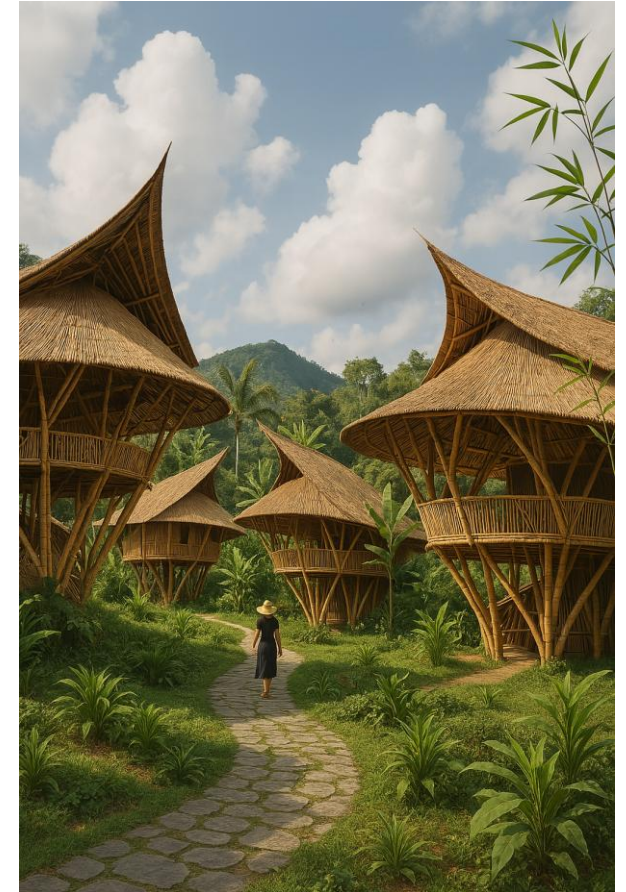
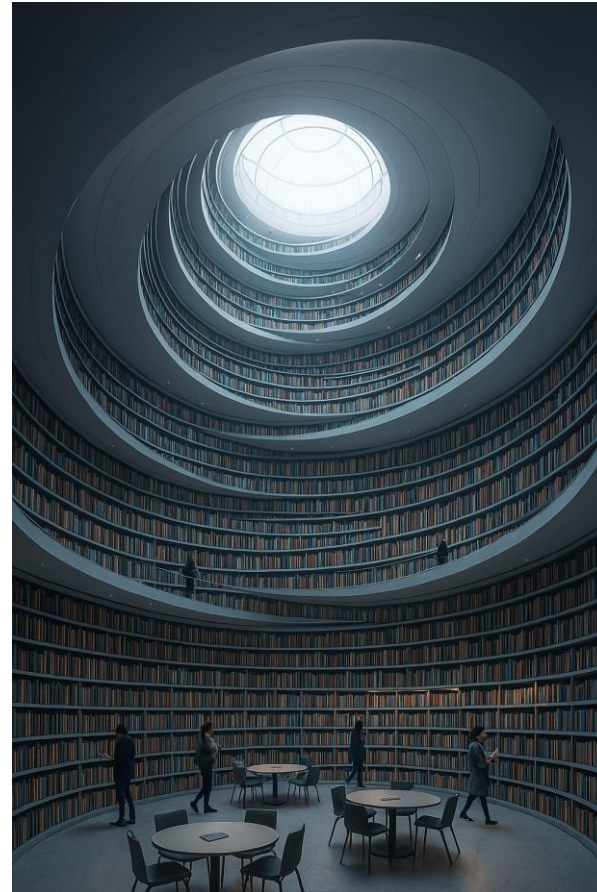
Create image A sustainable village made from bamboo

Image created



Discussion

- How long would you take to design/draw such scenes?
- What elements did the AI get right?
- What feels off or unrealistic?
- How would you change the prompt?
- Do you have use cases for your works, such as architectural plans and concepts?





Thank You!