



Stable Diffusion & Meshy AI

A. BEGINNER PRESENTATION AND TUTORIAL FOR AI MODELING

Introduction

B. WHAT IS AI MODELING?

AI modeling uses artificial intelligence to:

- Generate images
- Create textures
- Build 3D objects
- Accelerate game design and animation
- Help artists prototype ideas quickly

Today we will explore two powerful AI tools:

1. Stable Diffusion

An AI image generation model.

2. Meshy

An AI-powered 3D model generator.

Together, they allow users to go from:

Text Idea → AI Image → 3D Model

What is Stable Diffusion?

C. STABLE DIFFUSION



Stable Diffusion is an open-source AI model that creates images from text descriptions.

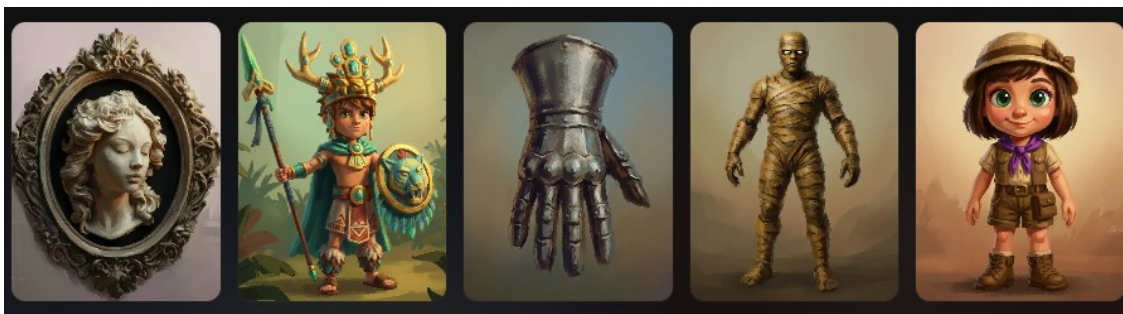
Example:

“A futuristic flying car in a cyberpunk city at sunset.”

The AI generates a completely new image based on that description.

Main Uses

- Concept art
- Character design
- Texture generation
- Storyboarding
- Product visualization
- Environment design



How Stable Diffusion Works

D. BASIC PRINCIPLE

Stable Diffusion learns from millions of images and text descriptions.

When you write a prompt:

1. The AI interprets the text
2. It predicts visual elements
3. It gradually creates an image from random noise
4. The final image appears after several iterations

This process is called:

E. DIFFUSION

The AI removes noise step-by-step until a coherent image is formed.

Important Vocabulary

F. PROMPT

The text instruction given to the AI.

Example:

“A medieval castle on a mountain, fantasy style, cinematic lighting.”

G. NEGATIVE PROMPT

Things you do NOT want in the image.

Example:

blurry, low quality, extra fingers

H. SAMPLING STEPS

Number of refinement passes.

More steps:

- Better detail
- Slower generation

I. CFG SCALE

Controls how strongly the AI follows the prompt.

Low CFG:

- More creative

High CFG:

- More faithful to the prompt

Example Workflow in Stable Diffusion

J. GOAL

Create a fantasy robot concept.

Step 1 — Write Prompt

“A futuristic robot warrior, highly detailed, sci-fi armor, cinematic lighting, realistic, 4k.”

Step 2 — Generate Images

The AI creates several variations.

Step 3 — Improve Prompt

Add:

- colors
- style
- camera angle
- environment

Step 4 — Upscale Image

Increase resolution and details.

Best Practices for Prompt Writing

K. GOOD PROMPT STRUCTURE

Subject

What is the main object?

Style

Realistic? Cartoon? Anime? Cyberpunk?

Lighting

Soft light, sunset, cinematic, neon

Camera

Close-up, wide shot, aerial view

Quality Keywords

Highly detailed, 4k, ultra realistic

L. EXAMPLE PROMPT

“A realistic dragon flying above snowy mountains, cinematic lighting, ultra detailed, fantasy art, 4k.”

What is Meshy?



M. MESHY AI

Meshy is an AI tool that creates:

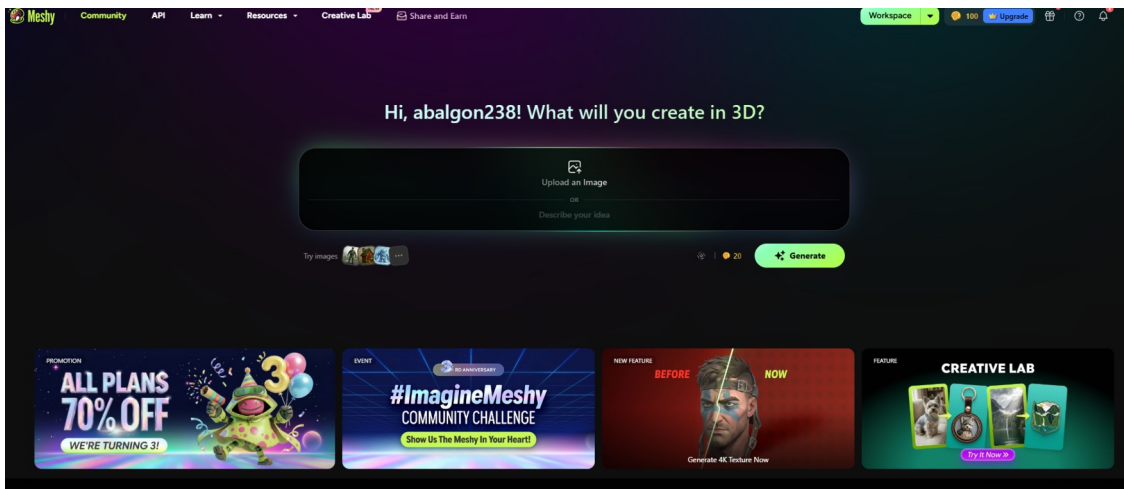
- 3D models
- textures
- game assets

using:

- text prompts
- images
- AI generation

It helps artists and developers create 3D content quickly.

Main Features of Meshy



N. TEXT-TO-3D

Generate a 3D object directly from text.

Example:

“A treasure chest made of gold and wood.”

O. IMAGE-TO-3D

Convert a 2D image into a 3D model.

P. AI TEXTURING

Automatically create textures for 3D objects.

Q. EXPORT OPTIONS

Meshy exports models for:

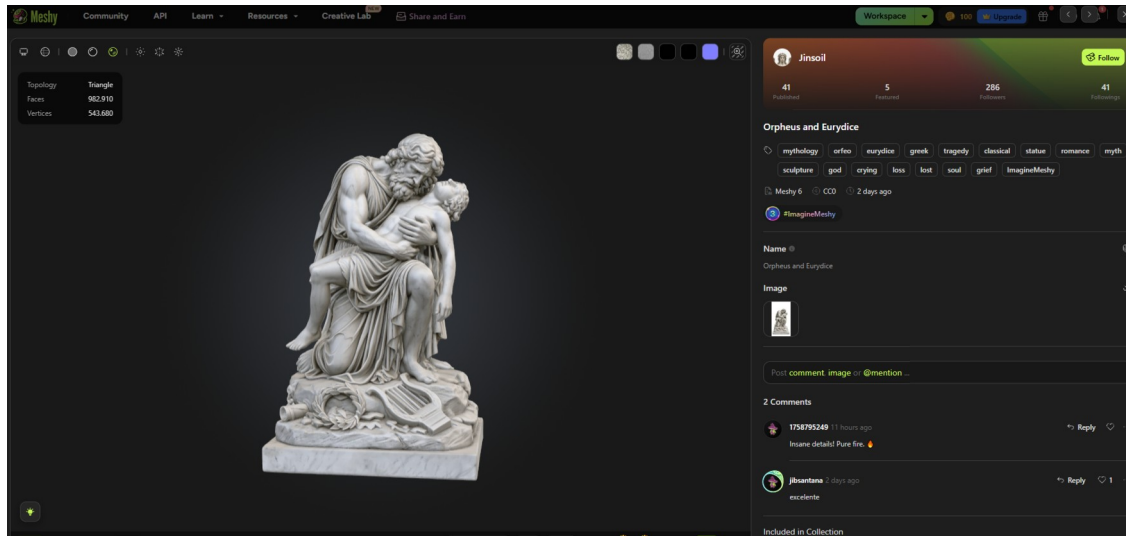
- Blender
- Unity
- Unreal Engine
- 3D printing

Formats include:

- FBX
- OBJ
- GLB

How Meshy Works

R. WORKFLOW



Step 1

Write a prompt or upload an image.

Step 2

The AI analyzes shapes and geometry.

Step 3

Meshy generates a 3D mesh.

Step 4

Textures and materials are applied.

Step 5

Export the final model.

Stable Diffusion + Meshy Pipeline

S. FULL AI CREATION PIPELINE

1. Generate Concept Art

Use Stable Diffusion.

Example:

“Cute fantasy mushroom house.”

2. Select Best Image

Choose the strongest concept.

3. Import into Meshy

Use Image-to-3D.

4. Generate 3D Model

Meshy creates geometry.

5. Export to Blender or Unity

Finalize the project.

Example Project

T. EXAMPLE: CREATING A FANTASY SWORD

In Stable Diffusion

Prompt:

“A magical fantasy sword glowing blue, medieval style, ultra detailed.”

Generate multiple concepts.

In Meshy

Upload the selected image.

Meshy generates:

- blade geometry
- handle
- textures
- materials

Export the sword model.

Applications of AI Modeling

U. GAME DEVELOPMENT

- Characters
- Weapons
- Props

- Environments

V. ANIMATION & FILM

- Storyboarding
- Rapid prototyping
- Background assets

W. ARCHITECTURE

- Interior visualization
- Building concepts

X. EDUCATION

- Learning 3D design
- Creative coding
- AI literacy

Advantages of AI Modeling

Y. SPEED

Create ideas in minutes.

Z. ACCESSIBILITY

Beginners can create advanced visuals.

AA. CREATIVITY

Explore many artistic variations quickly.

AB. COST REDUCTION

Faster prototyping saves production time.

Limitations and Challenges

AC. AI IS NOT PERFECT

Generated models may:

- contain geometry errors

- have strange textures
- need manual correction

AD. ETHICAL QUESTIONS

Important topics:

- Copyright
- Ownership
- Dataset usage
- Artist protection

AE. HUMAN CREATIVITY STILL MATTERS

AI helps creators.

It does not replace artistic direction.

Beginner Tutorial Activity

AF. ACTIVITY 1 — GENERATE AN AI CREATURE

Stable Diffusion Prompt

“A friendly forest creature, fantasy style, highly detailed.”

Generate 3 image variations.

AG. ACTIVITY 2 — CONVERT TO 3D

Import the favorite image into Meshy.

Generate:

- mesh
- texture
- materials

Export the result.

Beginner Exercises

AH. EXERCISE 1

Create a sci-fi vehicle.

AI. EXERCISE 2

Generate a fantasy castle.

AJ. EXERCISE 3

Create a cartoon animal in 3D.

AK. EXERCISE 4

Design a game weapon.

AL. EXERCISE 5

Create a futuristic robot.

AM. EXERCISE 6

Generate a magical environment scene.

Tips for Better Results

AN. USE SPECIFIC PROMPTS

Bad:

“A robot.”

Better:

“A futuristic red combat robot with glowing blue eyes, cinematic lighting, highly detailed.”

AO. ITERATE FREQUENTLY

Generate multiple versions.

AP. COMBINE AI + HUMAN EDITING

Use Blender or Photoshop for refinement.

AQ. KEEP ORGANIZED FILES

Save:

- prompts
- textures

- versions
- exports

Useful Software Around the Pipeline

AR. IMAGE GENERATION

- Stable Diffusion
- ComfyUI
- Automatic1111

AS. 3D EDITING

- Blender
- Maya
- Cinema 4D

AT. GAME ENGINES

- Unity
- Unreal Engine

Future of AI Modeling

AI modeling is evolving rapidly.

Future possibilities include:

- real-time 3D generation
- AI animation
- procedural worlds
- VR content generation
- AI-assisted filmmaking

The combination of AI and creativity will become increasingly important in digital industries.

Conclusion

AU. KEY TAKEAWAYS

Stable Diffusion

Creates AI-generated images.

Meshy

Transforms ideas into 3D assets.

Together

They form a powerful AI content creation workflow.

AV. FINAL MESSAGE

AI tools are creative assistants.

The best results come from:

- experimentation
- iteration
- imagination
- artistic direction

AW. QUESTIONS?