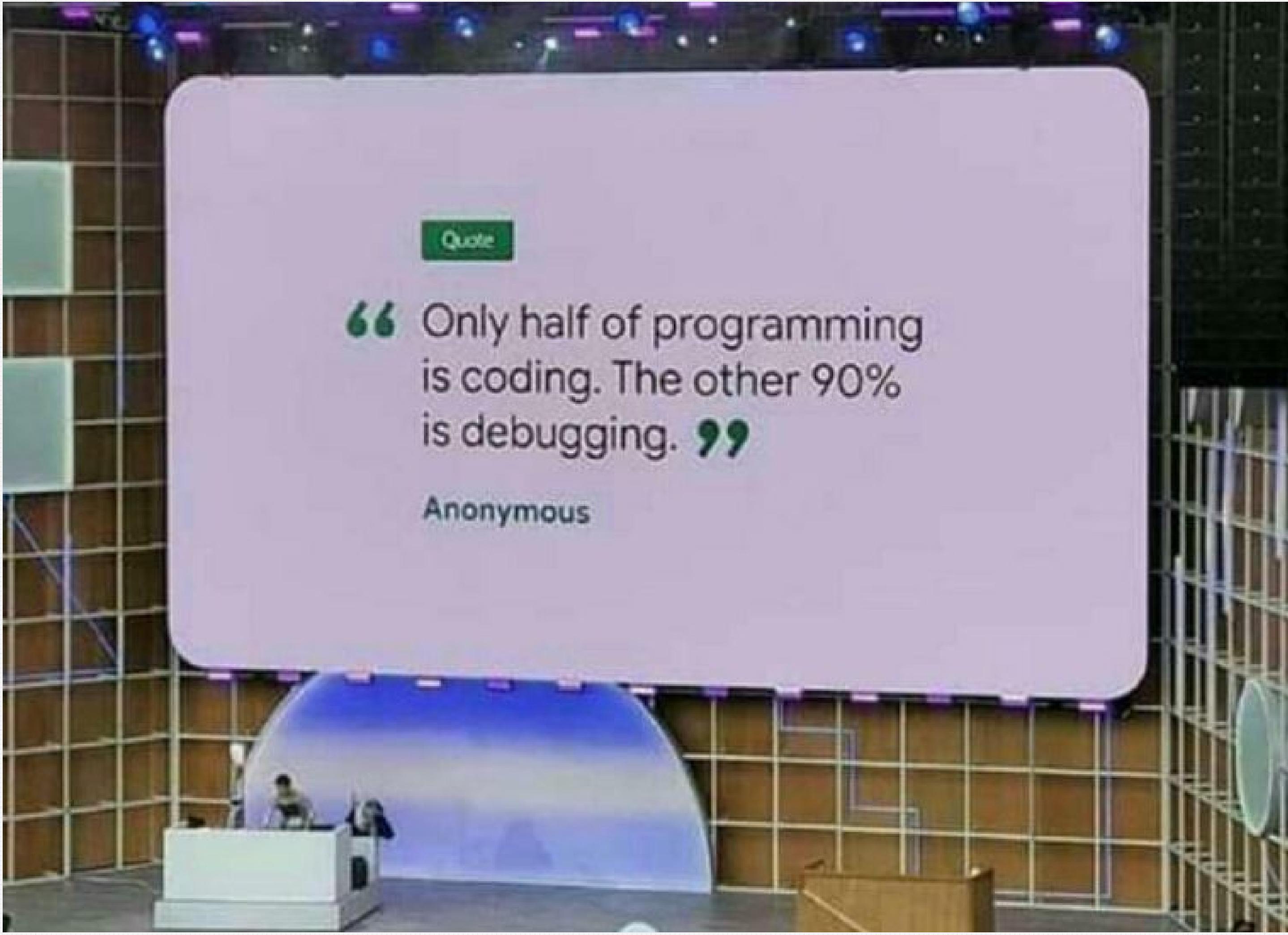


**100xEngineers**

# Lecture 05

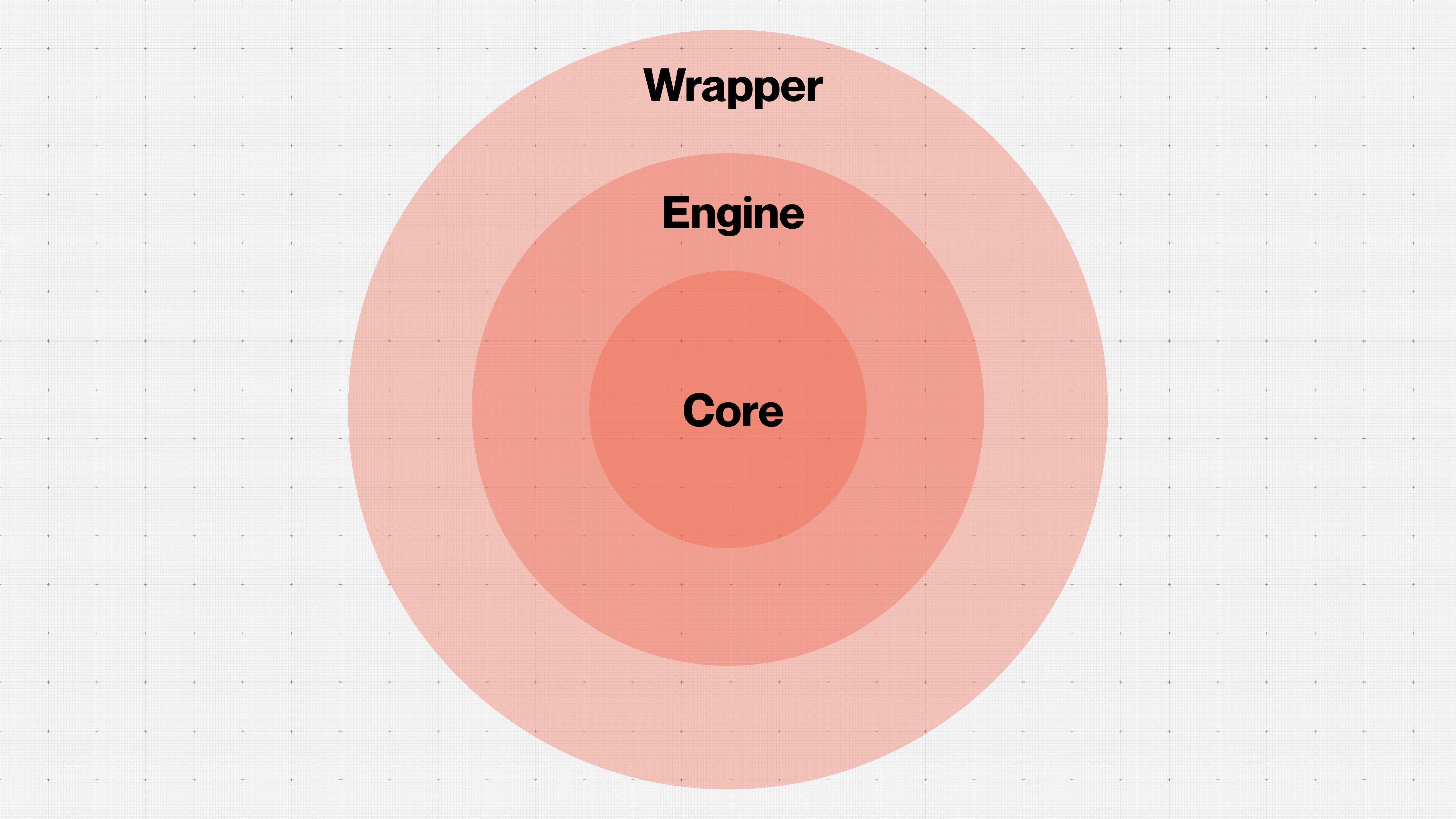
## Stable Diffusion Versions, Controlnet and Scripts

# Debugging



# Recap

- **Diffusion -> Noise Predictor -> VAE**
- **Prompt Engineering -> Subject, Styles, Medium, Camera & Lighting etc.**
- **SD Parameters -> CFG, Seed, Steps, Samplers, Upscalers etc.**

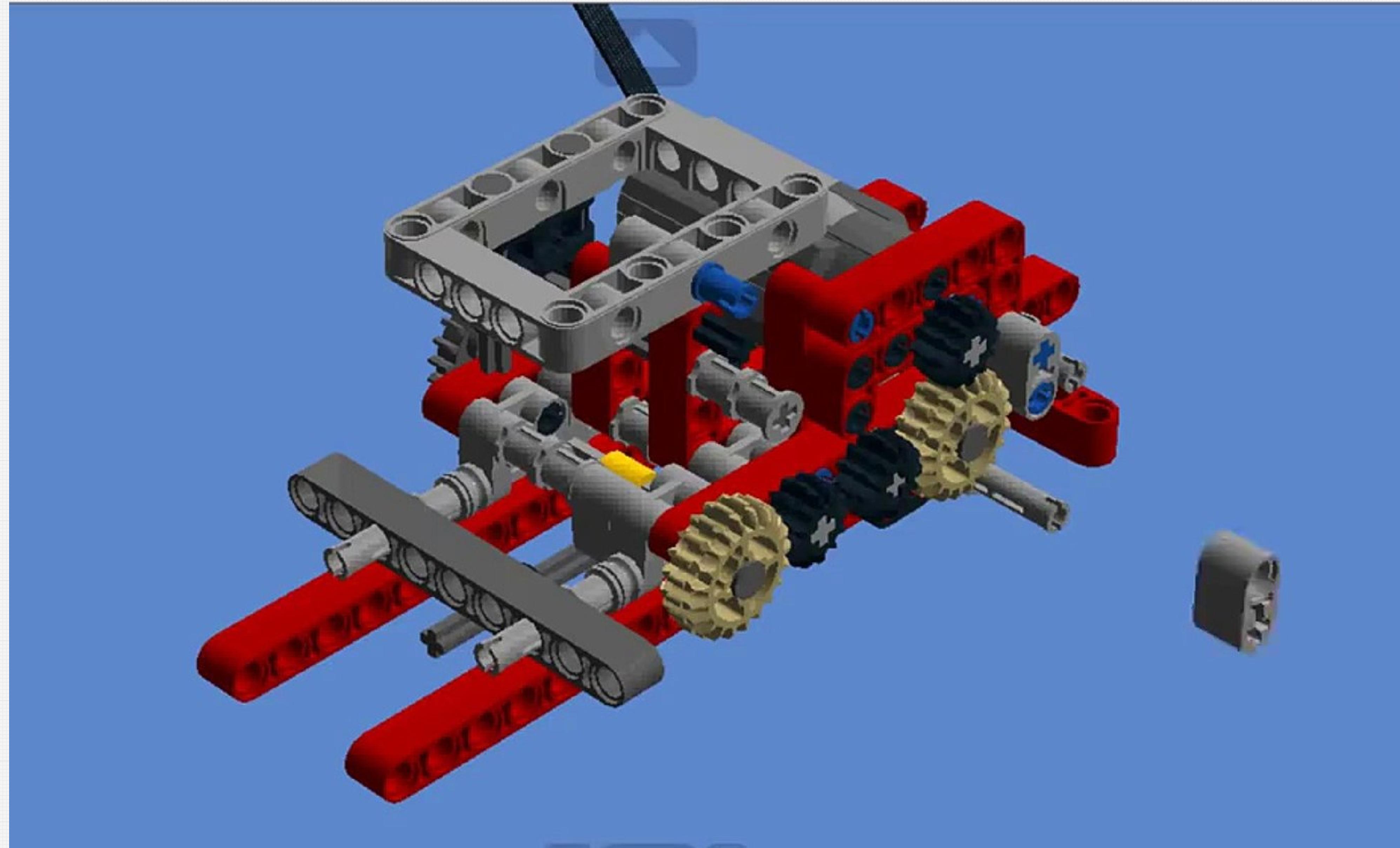


**Wrapper**

**Engine**

**Core**



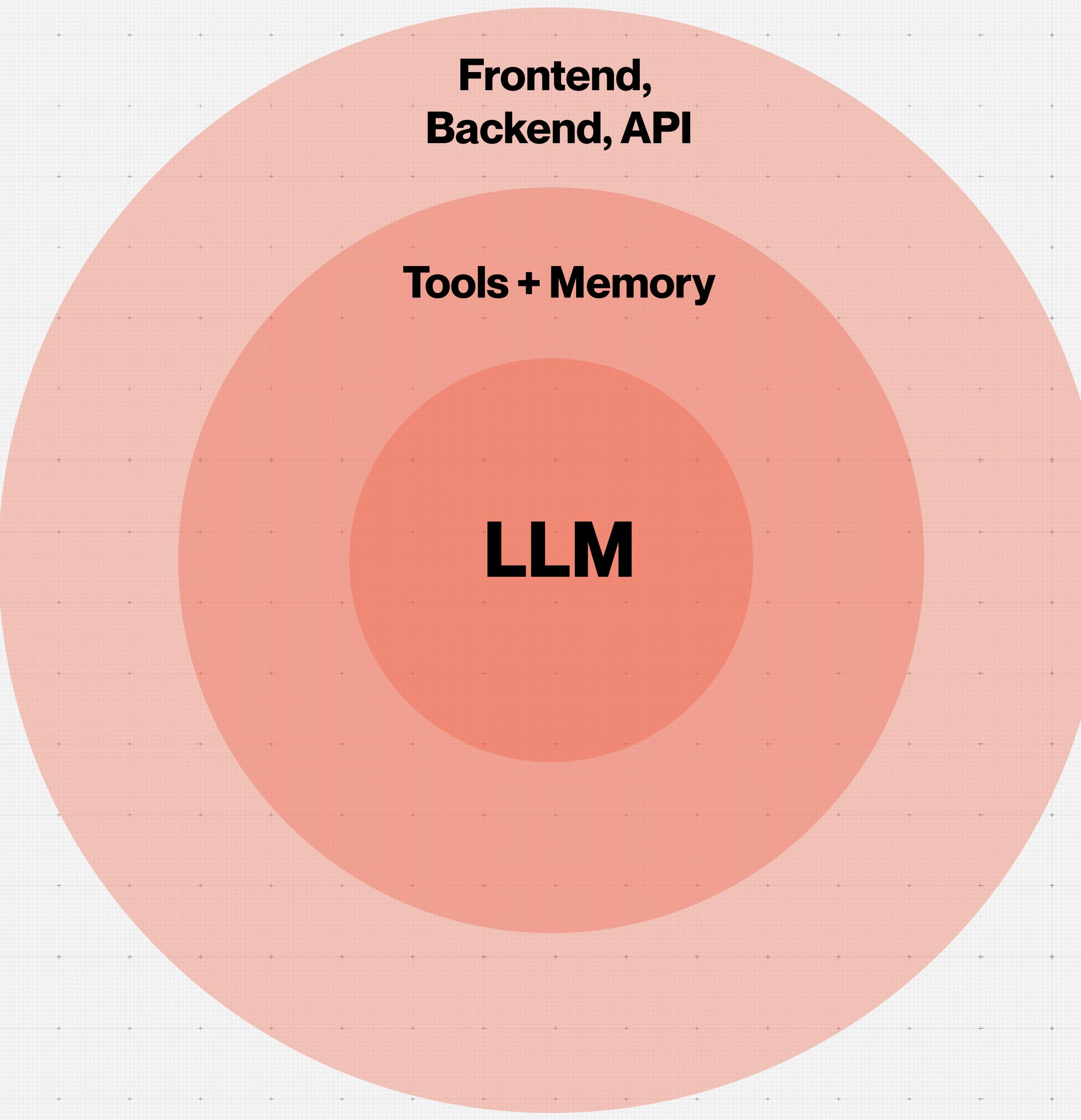




**Frontend,  
Backend, API**

**ComfyUI**

**ControlNet,  
Inpainting,  
LoRA, Prompt,  
Dreambooth,**



**Frontend,  
Backend, API**

**Tools + Memory**

**LLM**

**Stable diffusion versions**

**SD 1.5**



**SD 2.0**



**SD 2.1**



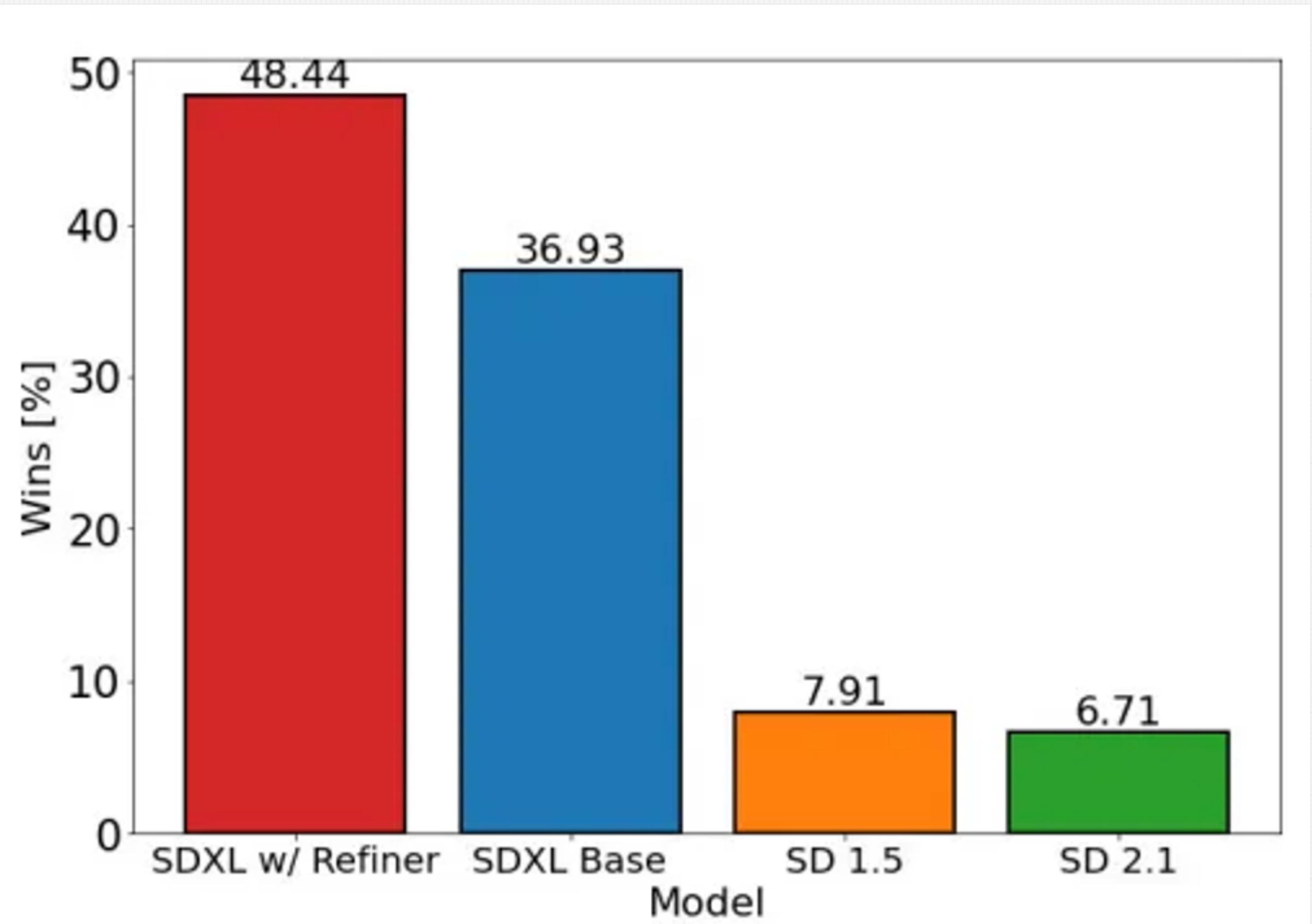
**SDXL v1.0 Base**



**SDXL v1.0 Base + Refinement**



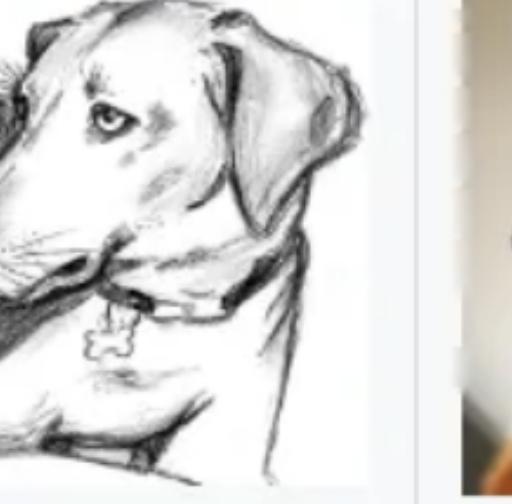
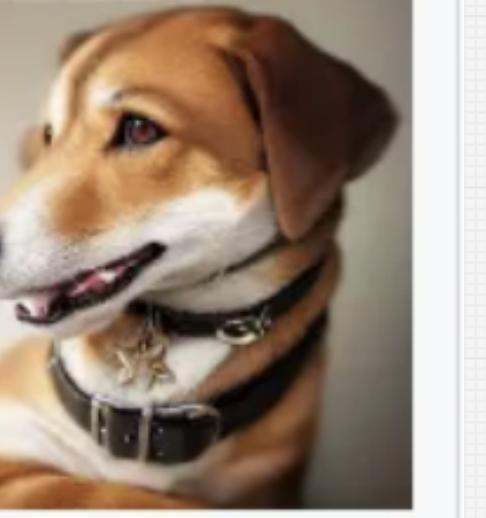
# Which is better?



# Controlnets

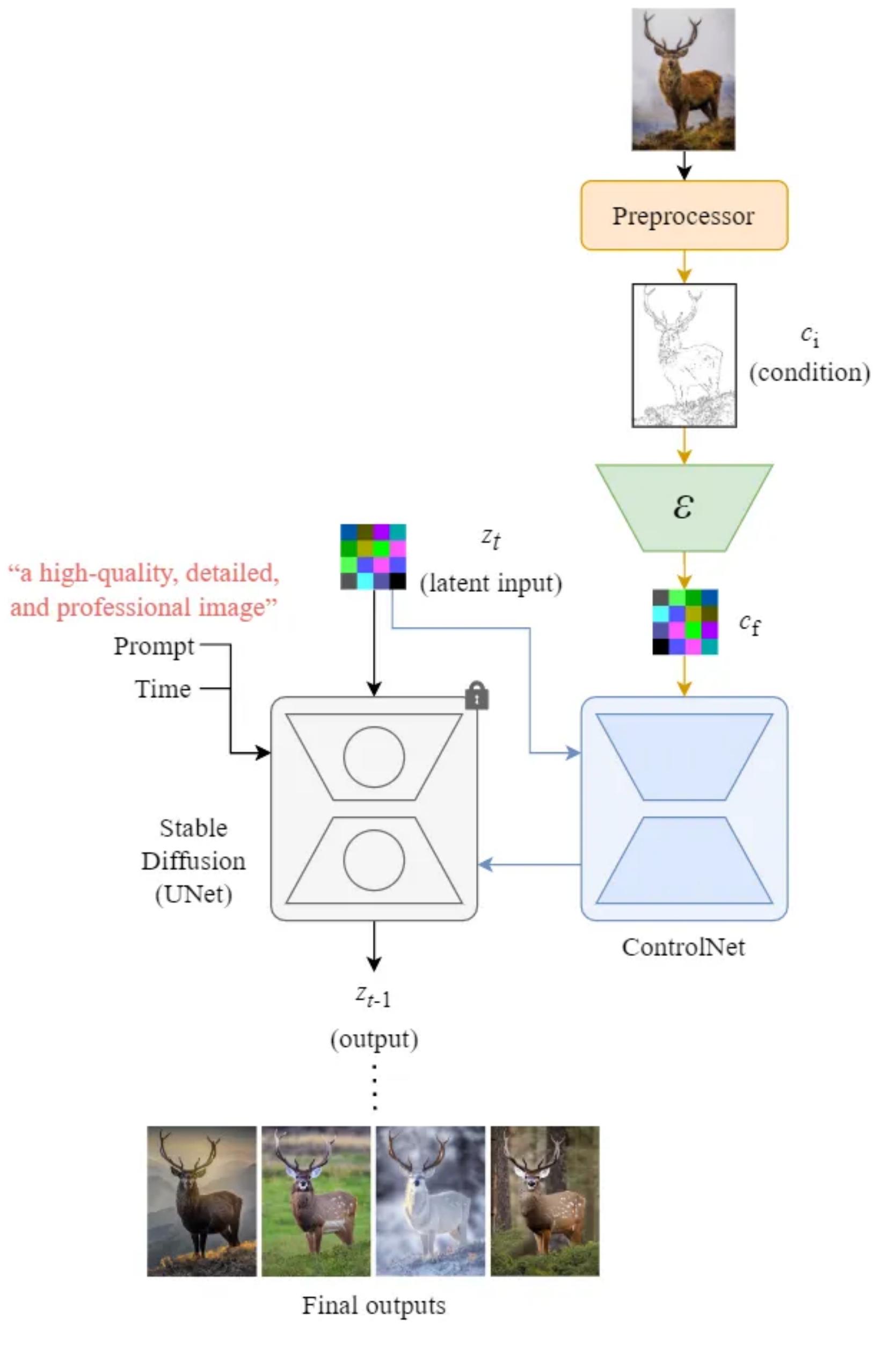
Stable Diffusion

# What does a **Controlnet** do?

Source	Condition Input	Output
(no preprocessor)		
(no preprocessor)		
		

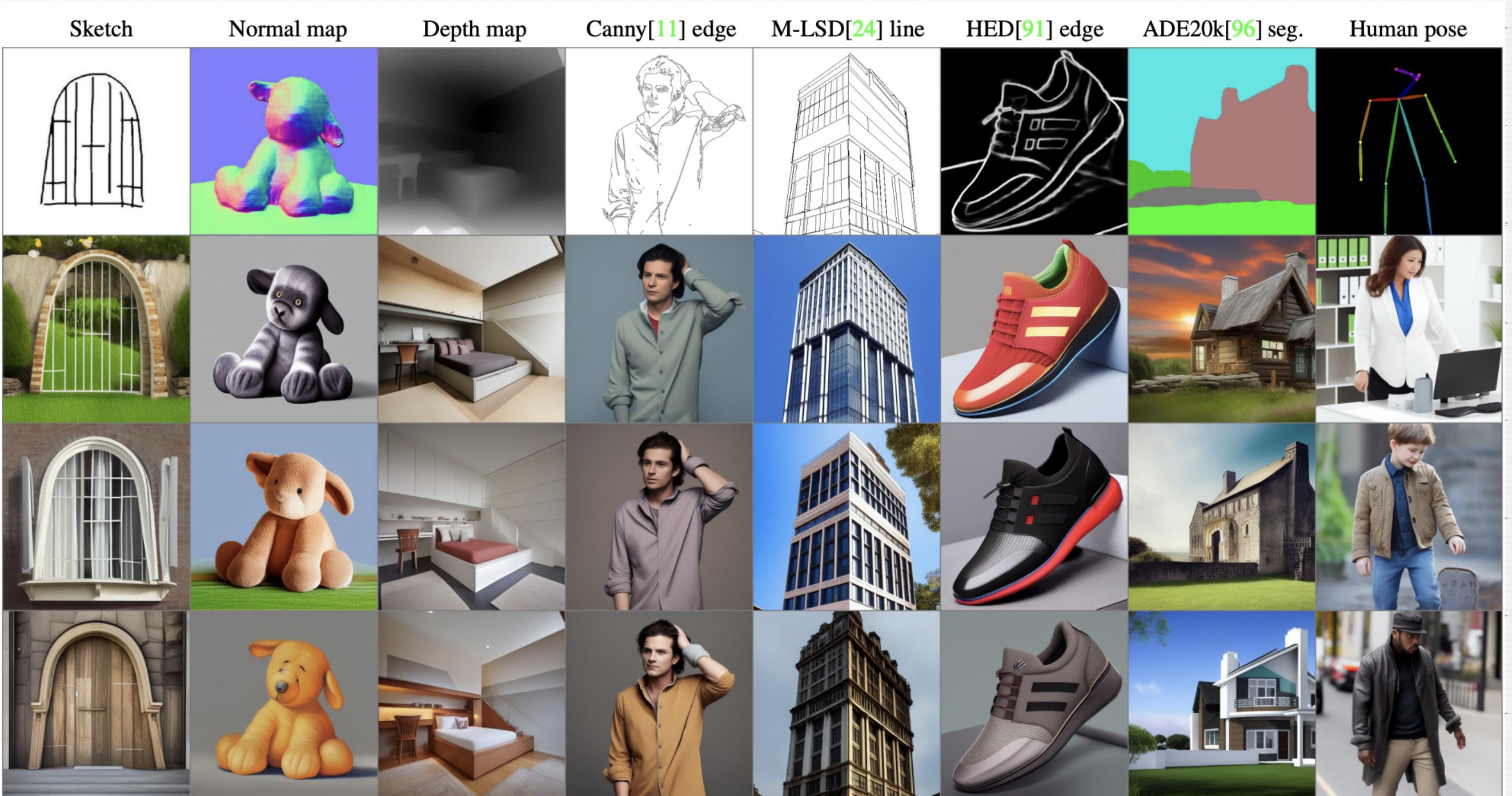
# How does a **Controlnet** work?

Stable Diffusion

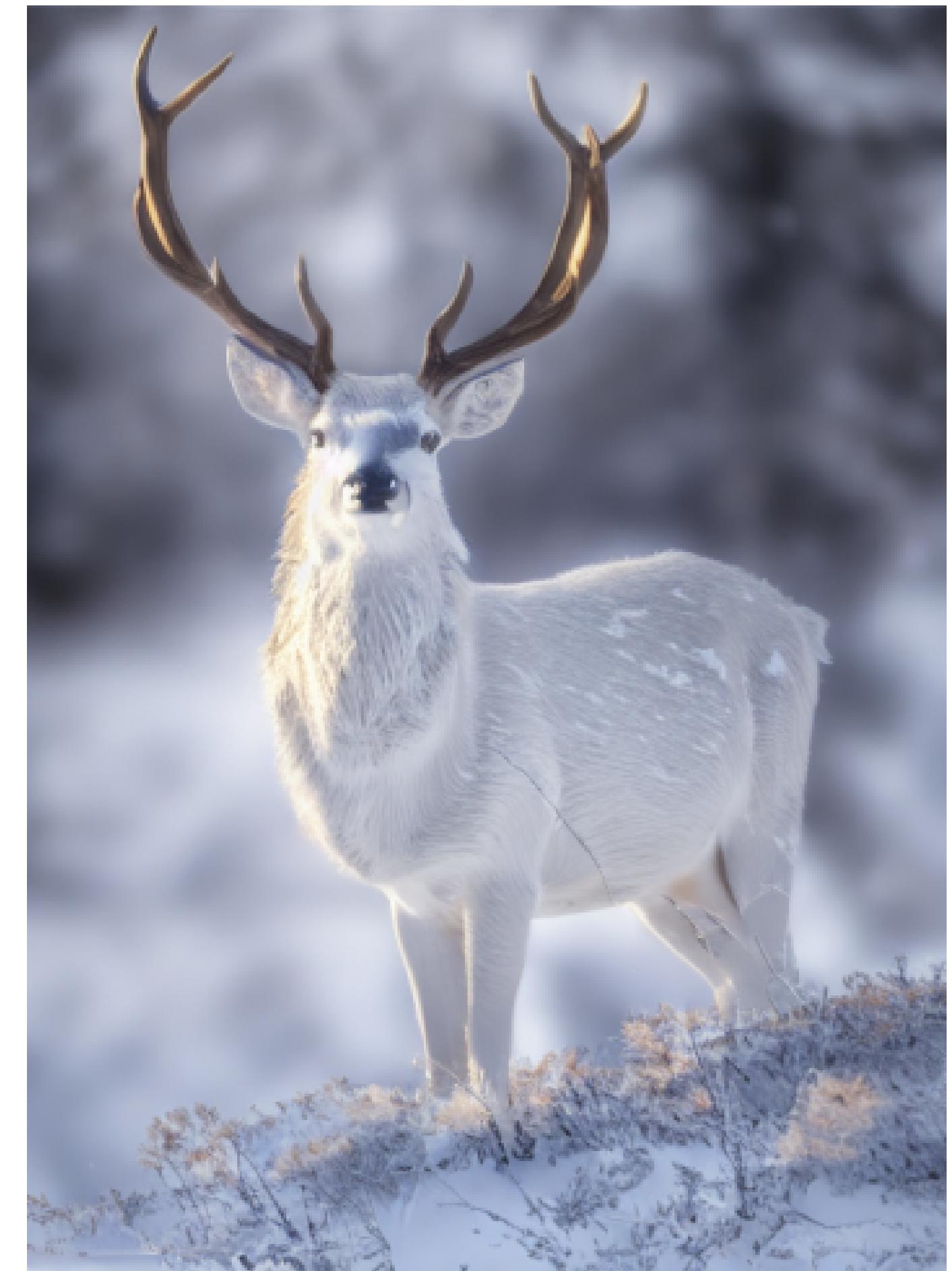
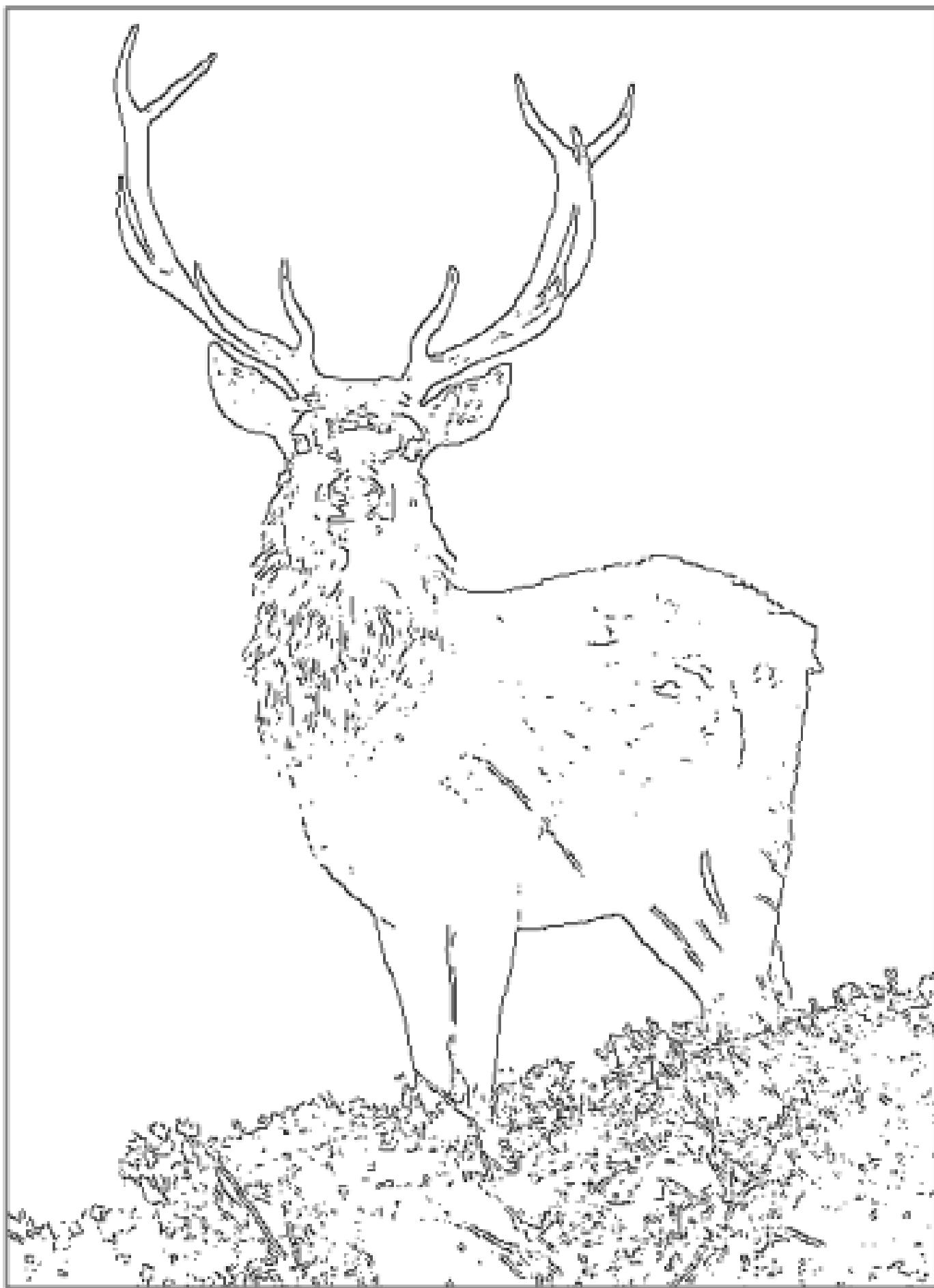


# Types of ControlNets

- Canny Edge
- Scribble
- M-LSD / Hough Line
- Segmentation
- Depth
- Normal Map
- Open Pose



# 1. Canny Edge



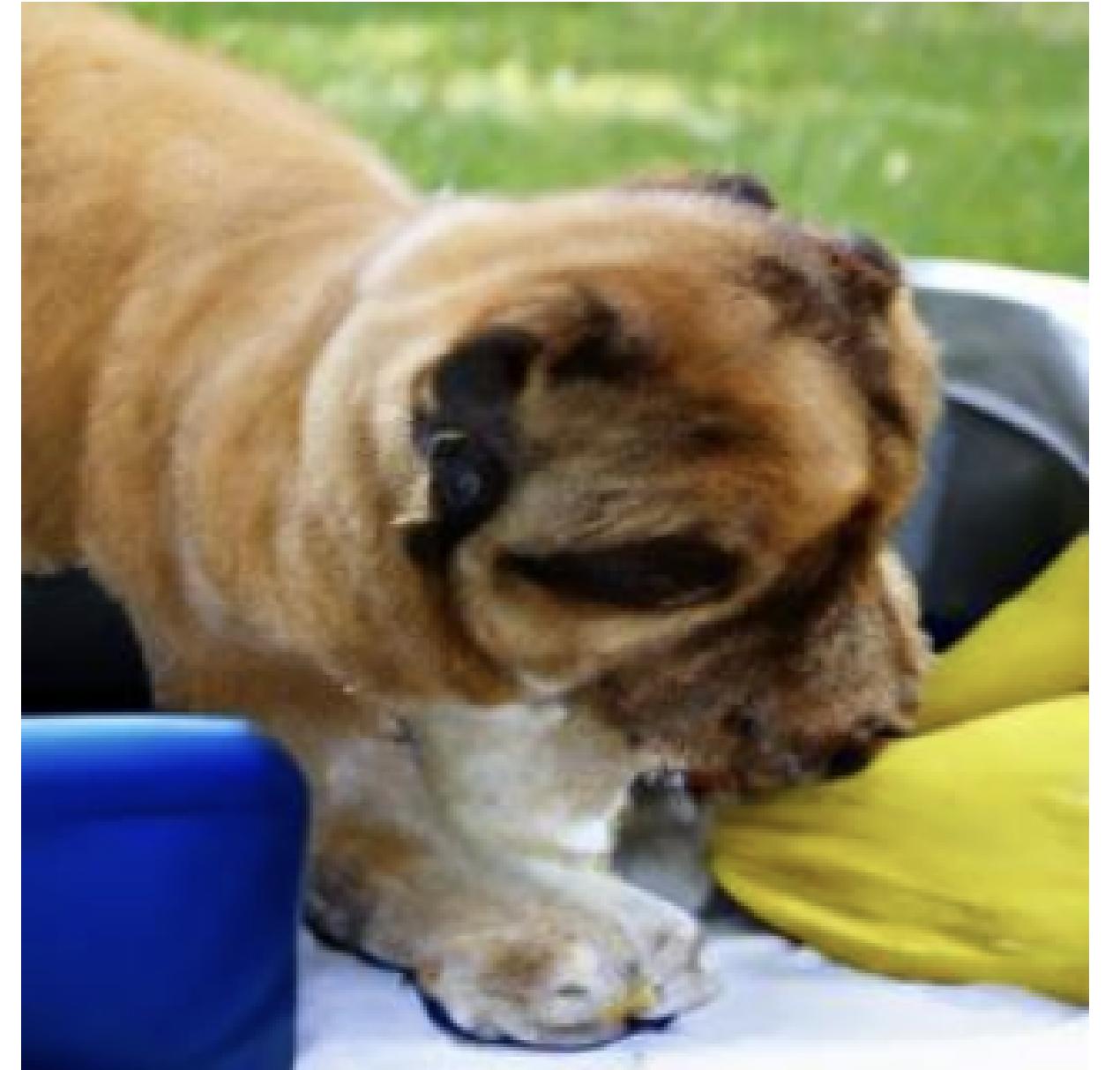
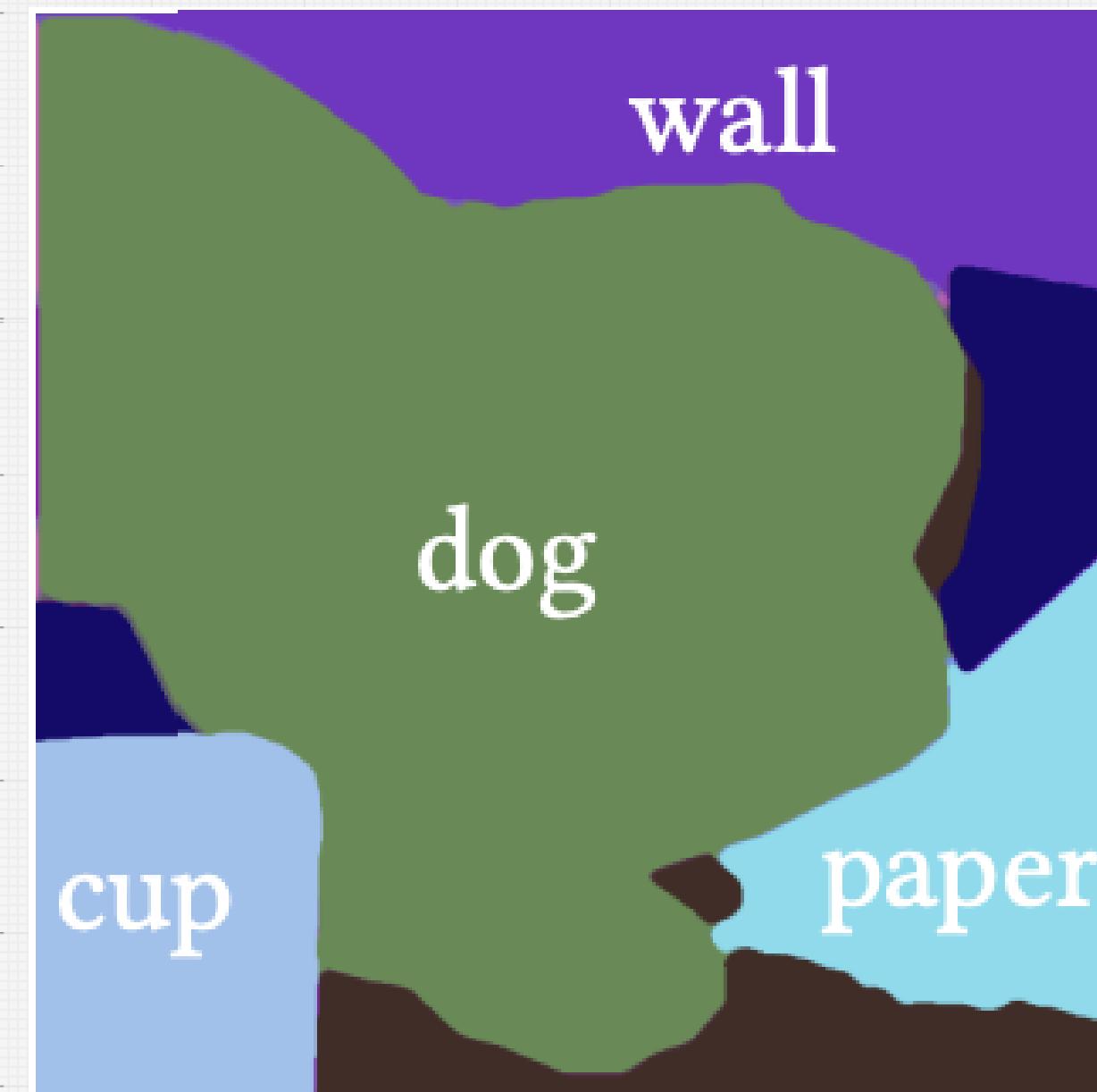
## 2. Scribble



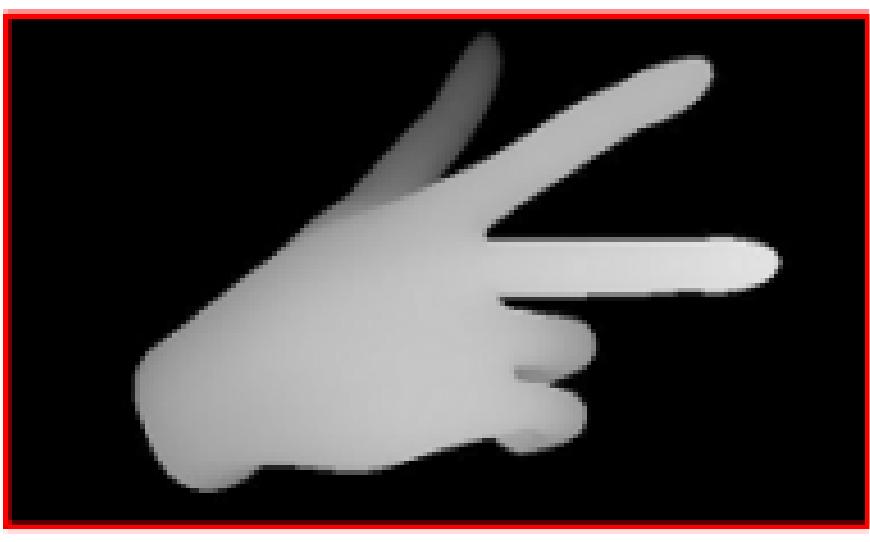
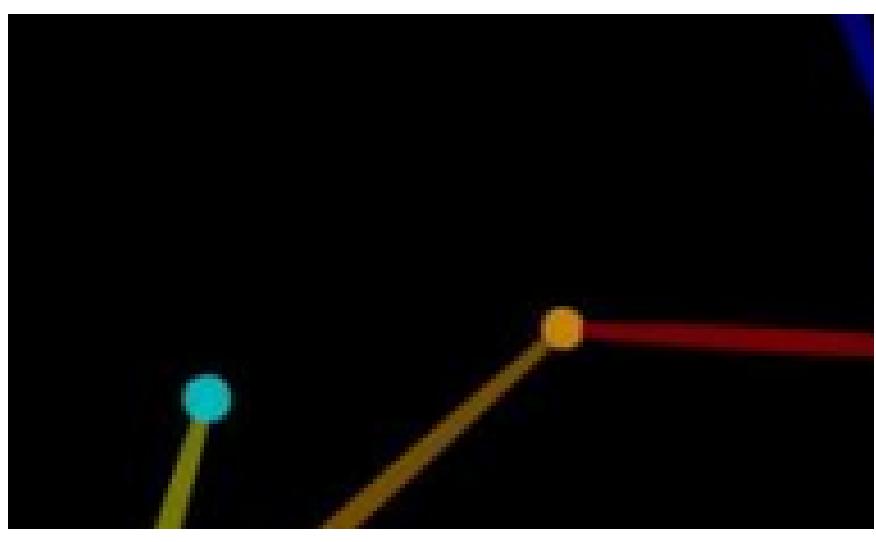
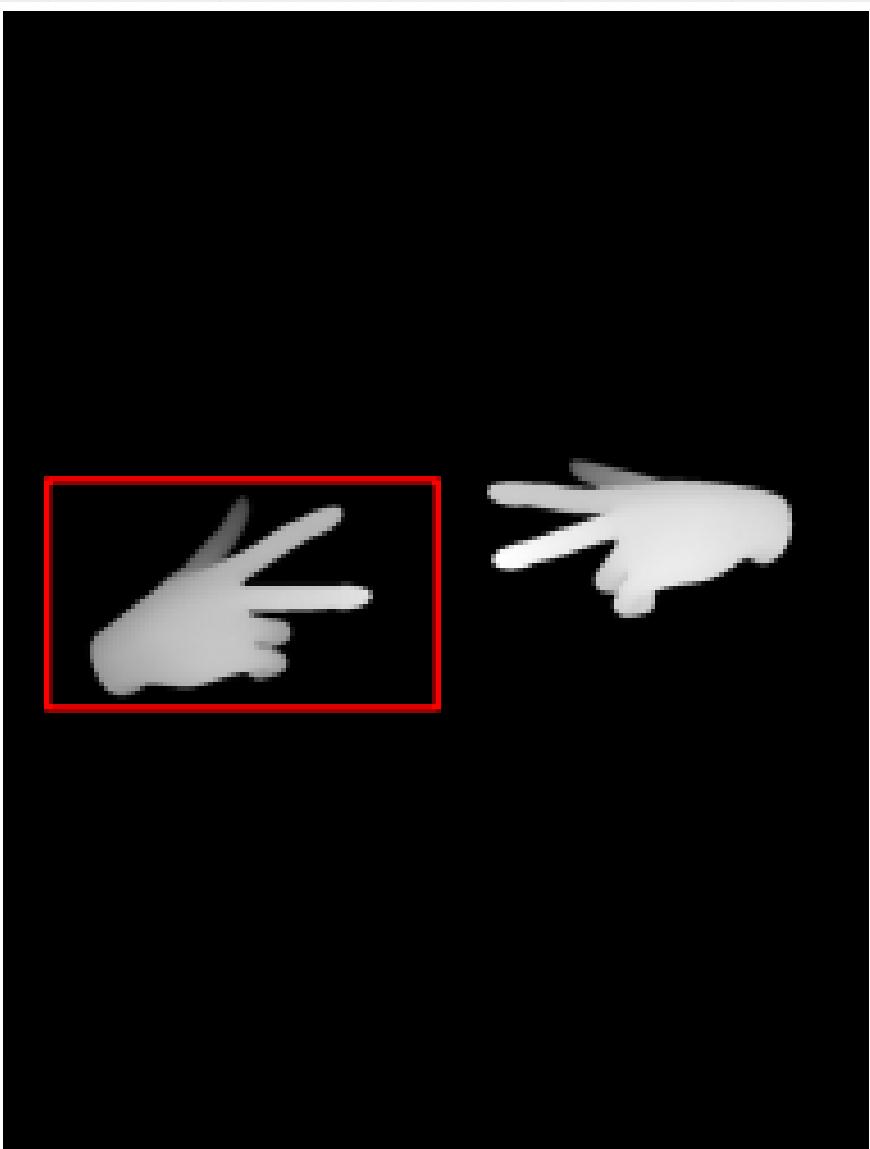
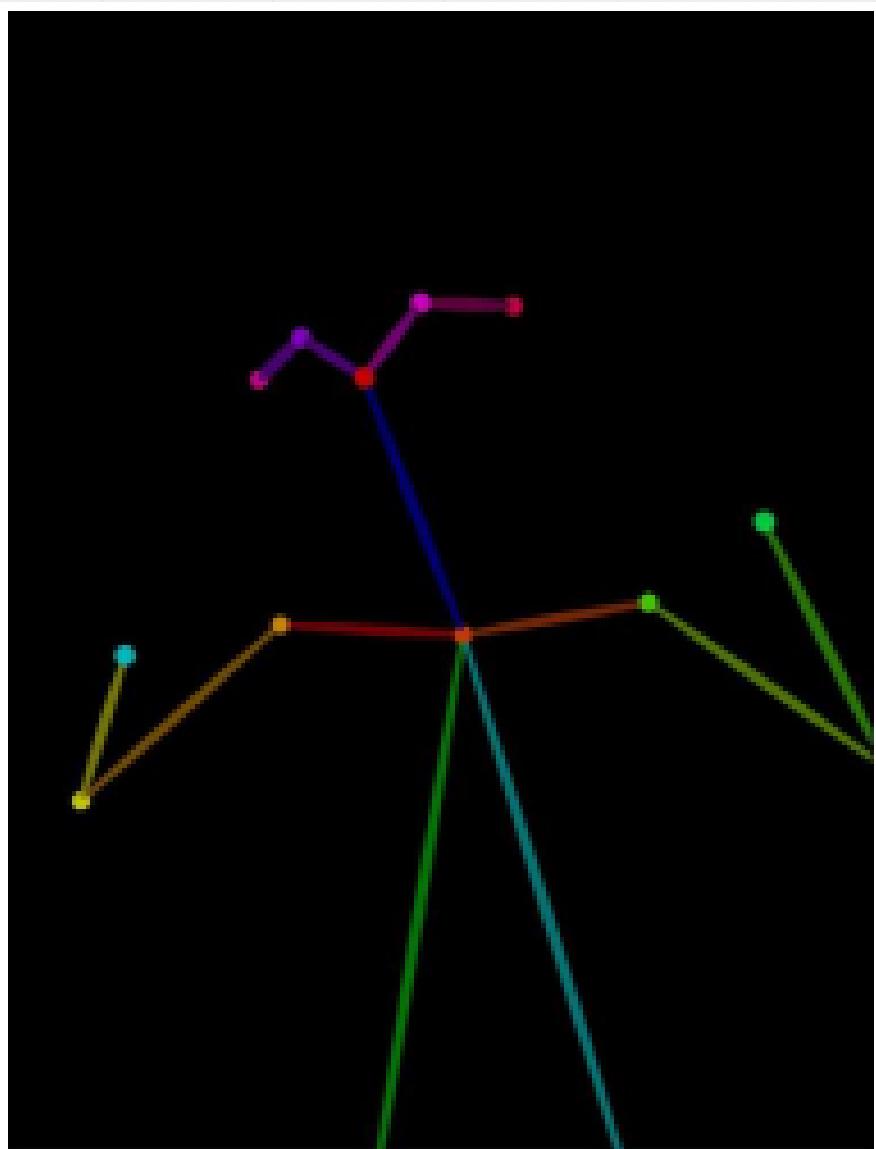
### 3. M-LSD / Hough Line



# 4. Segmentation

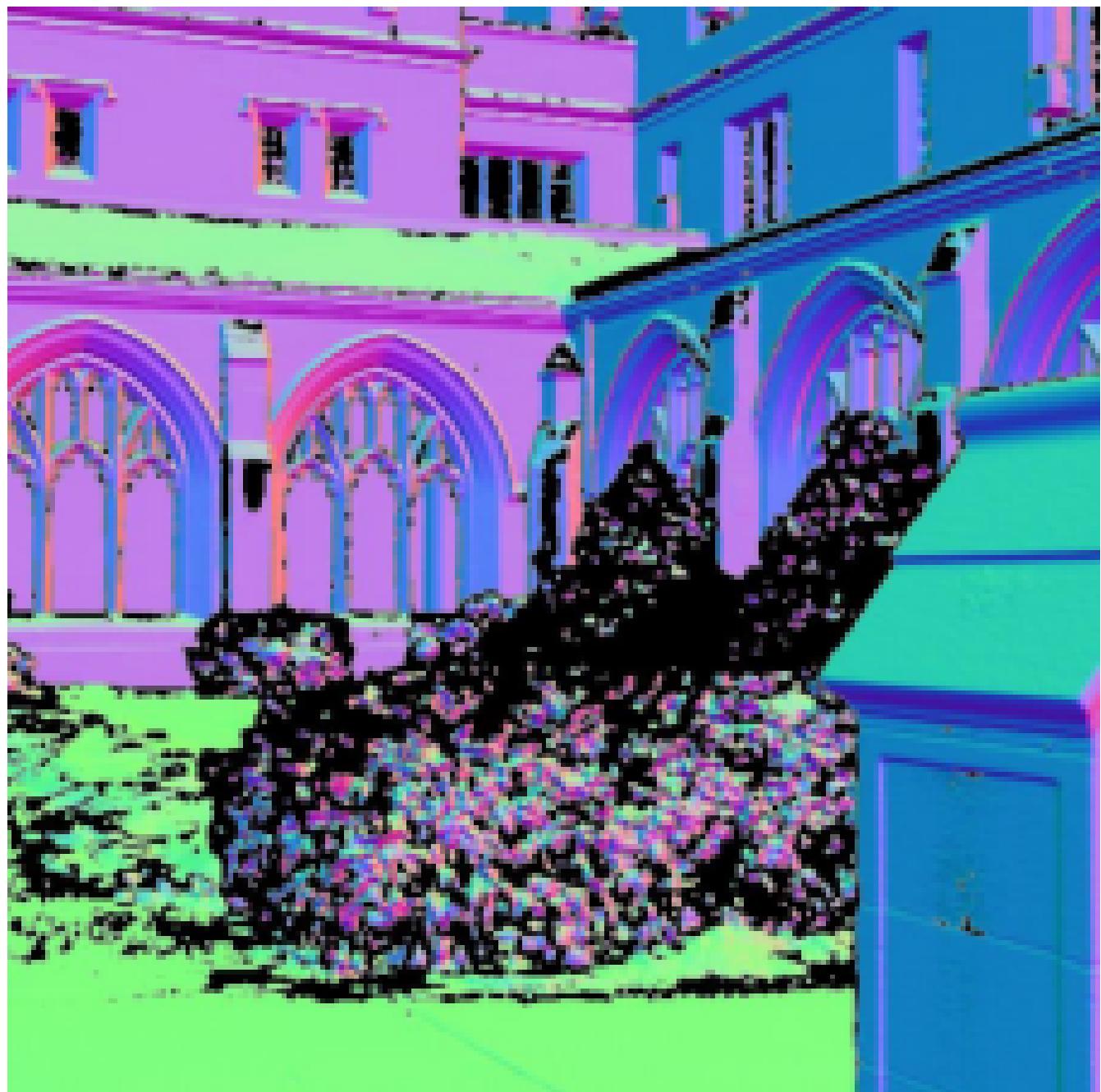


# 5. Depth



## 6. Normal Map

Normal



Default



User Prompt

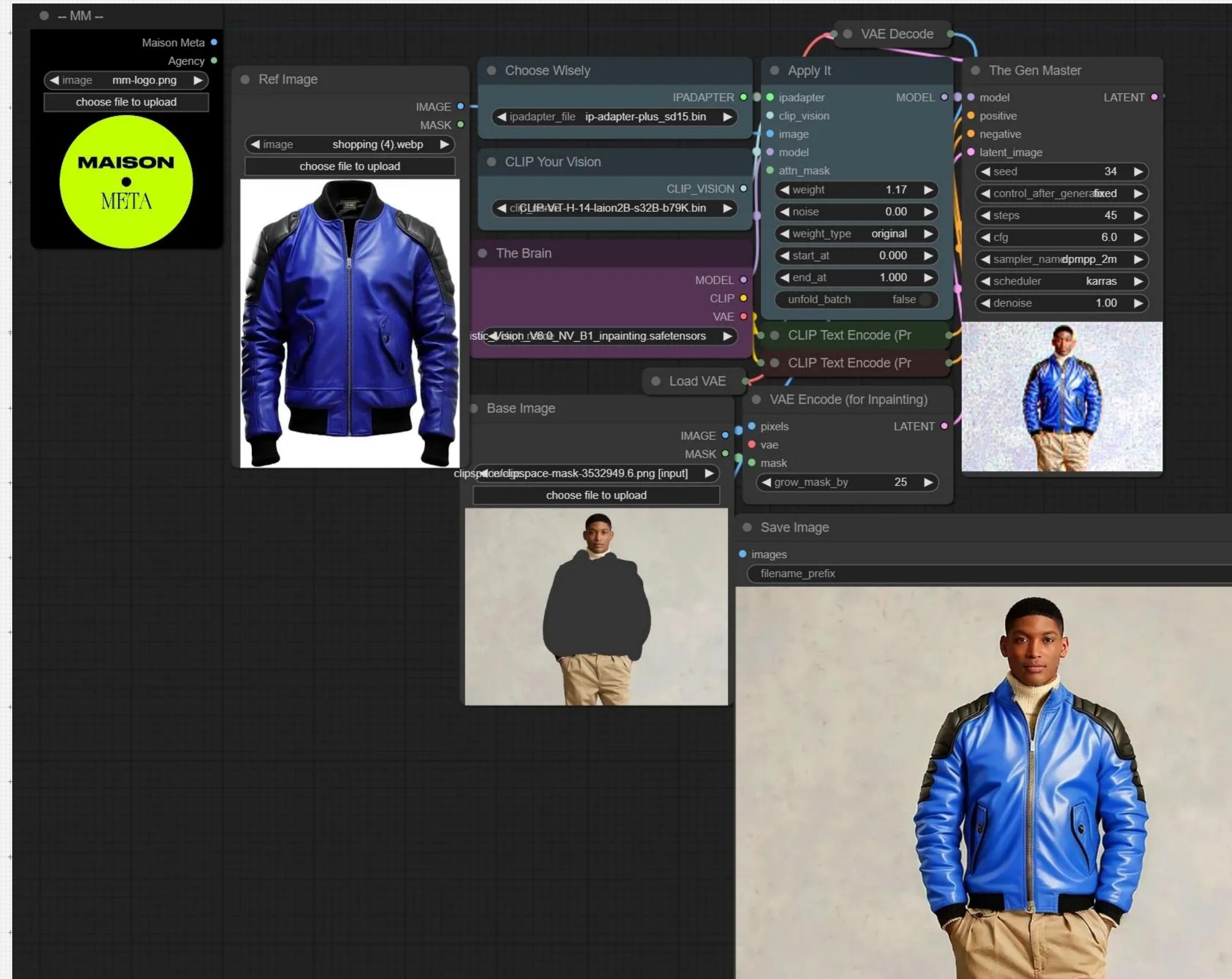


“garden, colorful flowers”

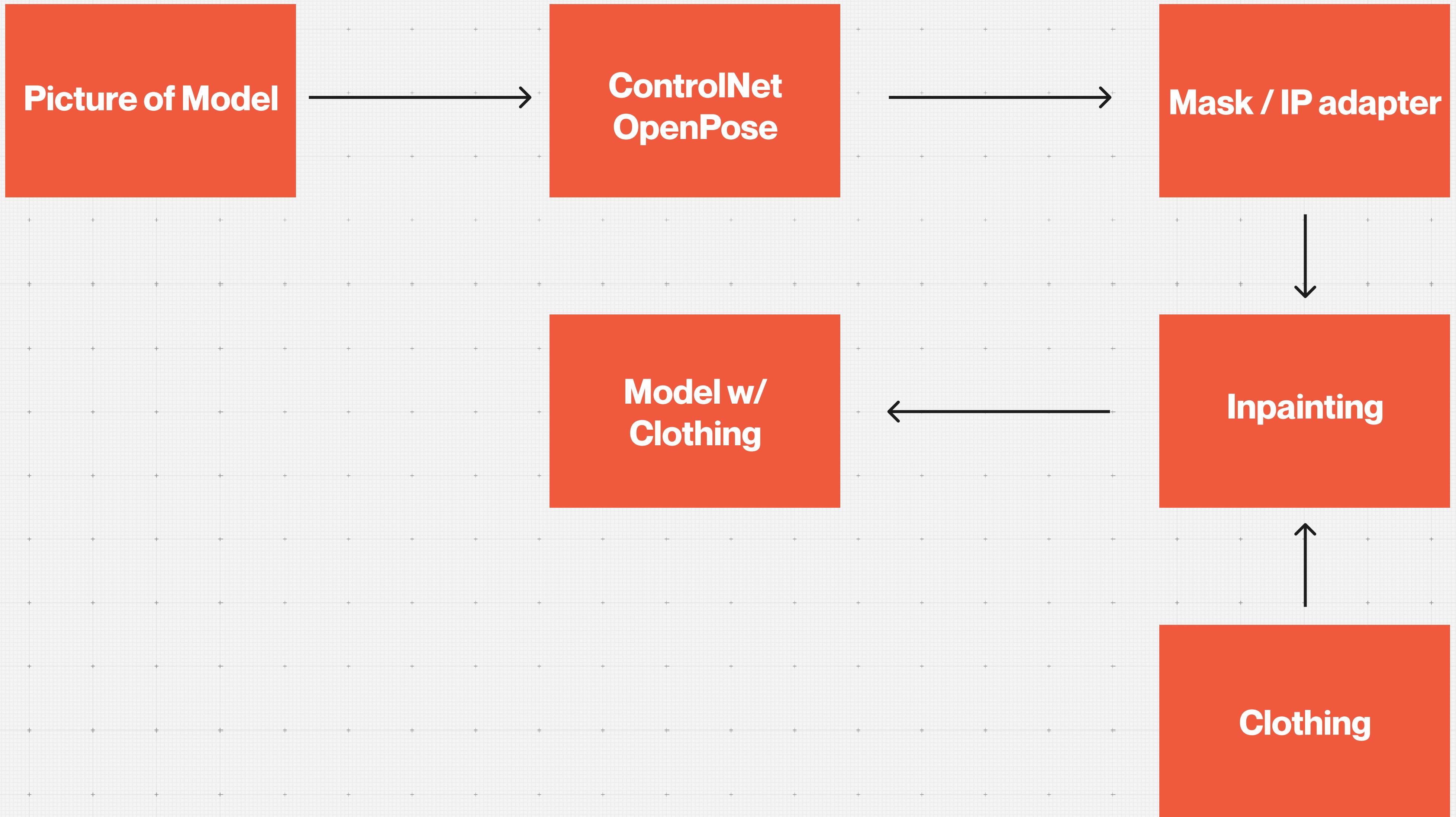
# 7. Open Pose



# Outfit Anyone



# Outfit Anyone Basic Workflow



# Scripts



<https://github.com/AUTOMATIC1111/stable-diffusion-webui/wiki/Custom-Scripts>

# Resources

- 1.** <https://app.posemy.art/>
- 2.** <https://openposes.com/>
- 3.** <https://medium.com/@techlatest.net/stable-diffusion-and-control-net-a-beginners-guide-9efefe2790f>
- 4.** <https://stable-diffusion-art.com/controlnet/>
- 5.** [https://github.com/AUTOMATIC1111/stable-diffusion-webui/  
wiki/Custom-Scripts](https://github.com/AUTOMATIC1111/stable-diffusion-webui/wiki/Custom-Scripts)