DiLightNet: Fine-grained Lighting Control for Diffusion-based Image Generation
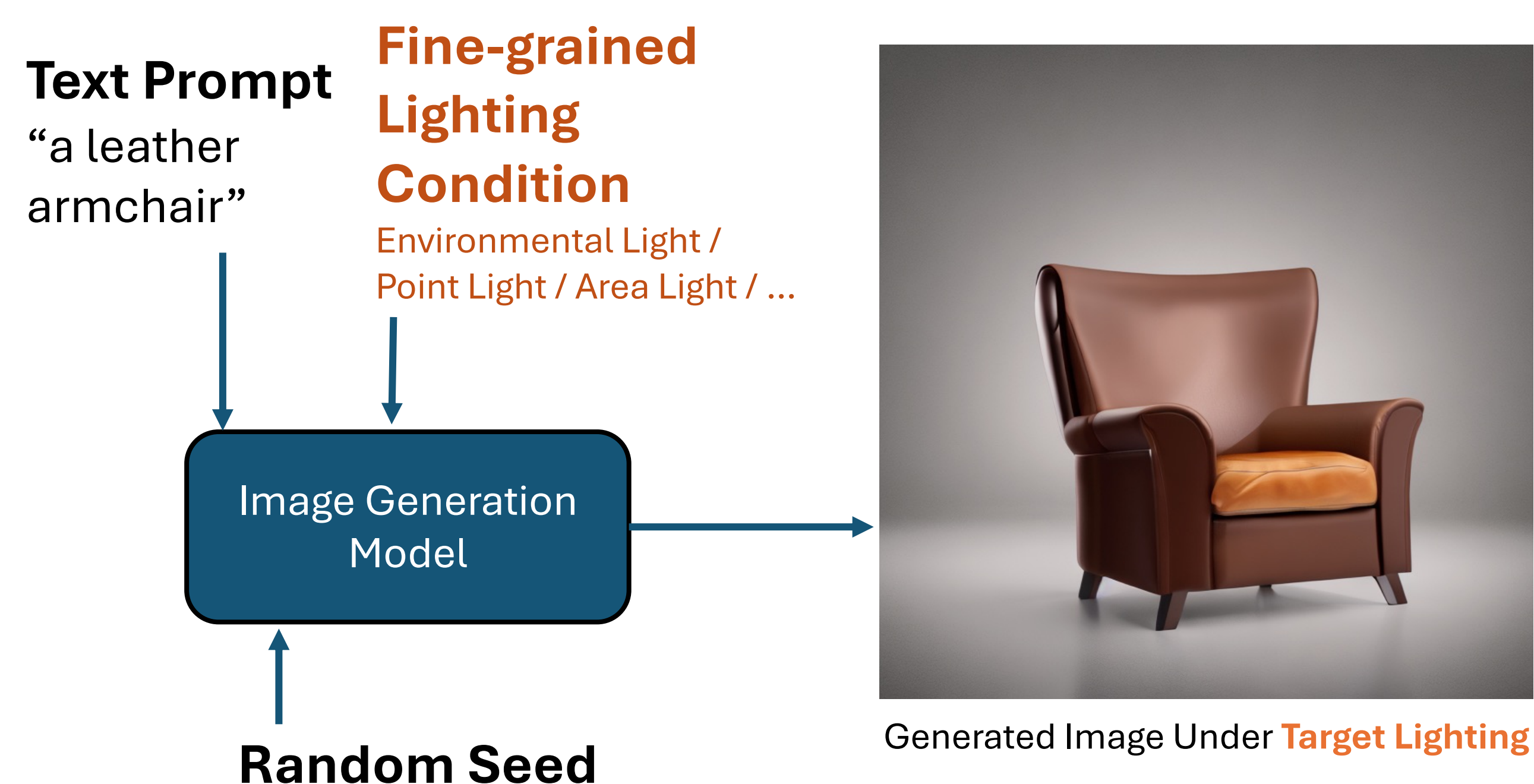
https://dilightnet.github.io/

Chong Zeng, Yue Dong, Pieter Peers, Youkang Kong, Hongzhi Wu, Xin Tong
Zhejiang University, Microsoft Research Asia, College of William & Mary, Tsinghua University
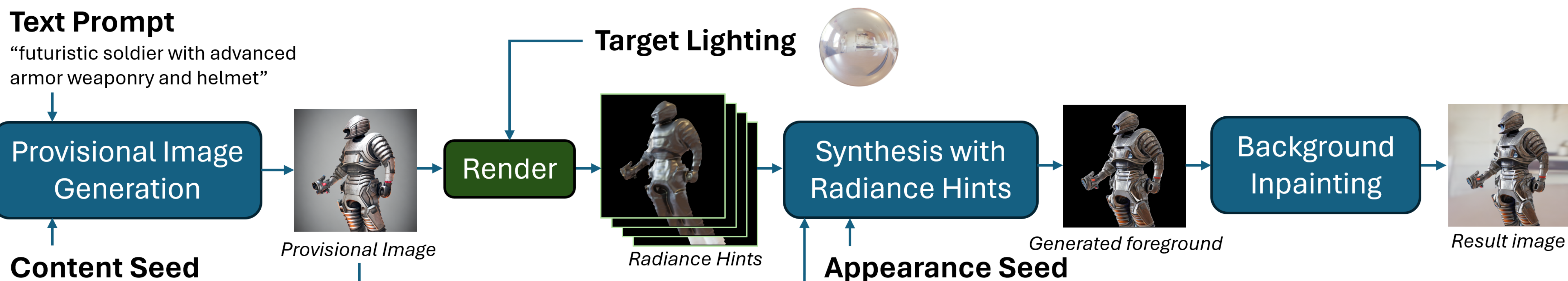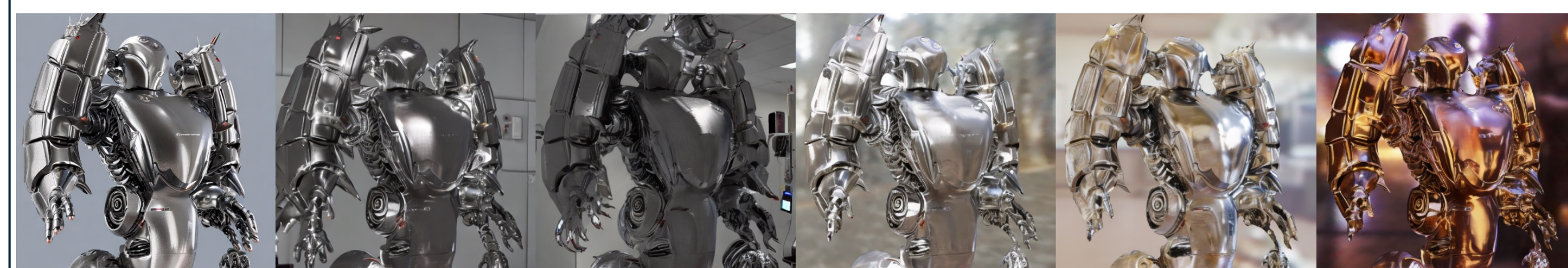
SIGGRAPH 2024
DENVER+ 28 JUL — 1 AUG

Our Goal

Text Prompt
"a leather armchair"

Fine-grained Lighting Condition
Environmental Light / Point Light / Area Light / ...

Image Generation Model

Random Seed

Generated Image Under **Target Lighting**

Our Pipeline

Text Prompt
"futuristic soldier with advanced armor weaponry and helmet"

Provisional Image Generation

Content Seed

Provisional Image

Target Lighting

Render

Radiance Hints

Synthesis with Radiance Hints

Appearance Seed

Generated foreground

Background Inpainting

Result image

Our Results

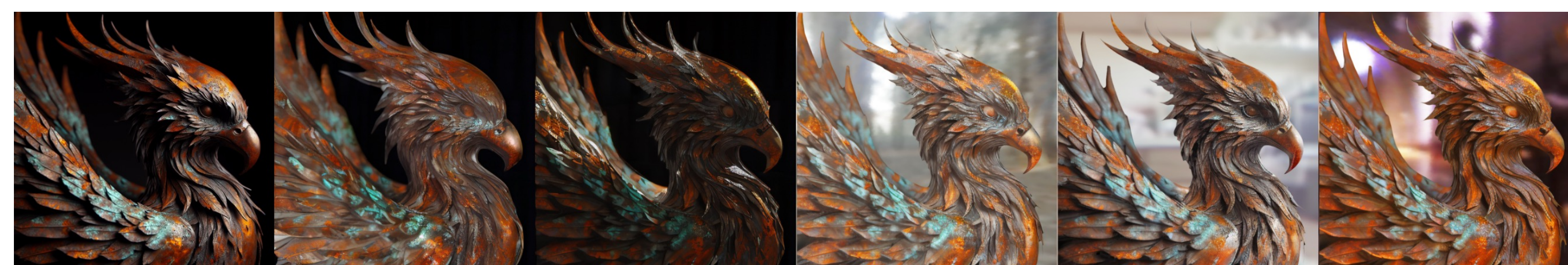**Target Lighting**

"machine dragon robot in platinum"

"Storm trooper style motorcycle"

"A giraffe imitating a turtle, photorealistic"

"gorgeous ornate fountain made of marble"

"Rusty sculpture of a phoenix with its head more polished yet the wings are more rusty"

For our code, model and more results, please visit our project page!