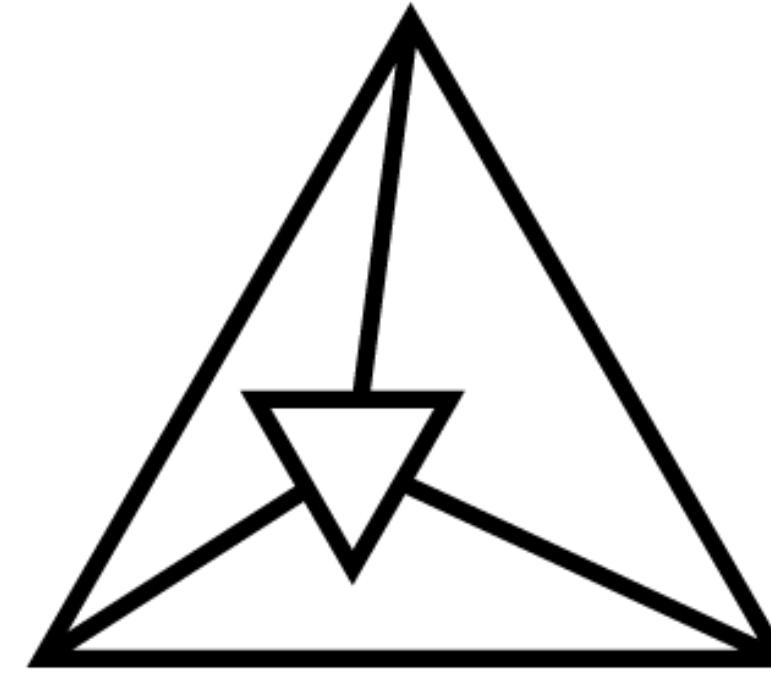
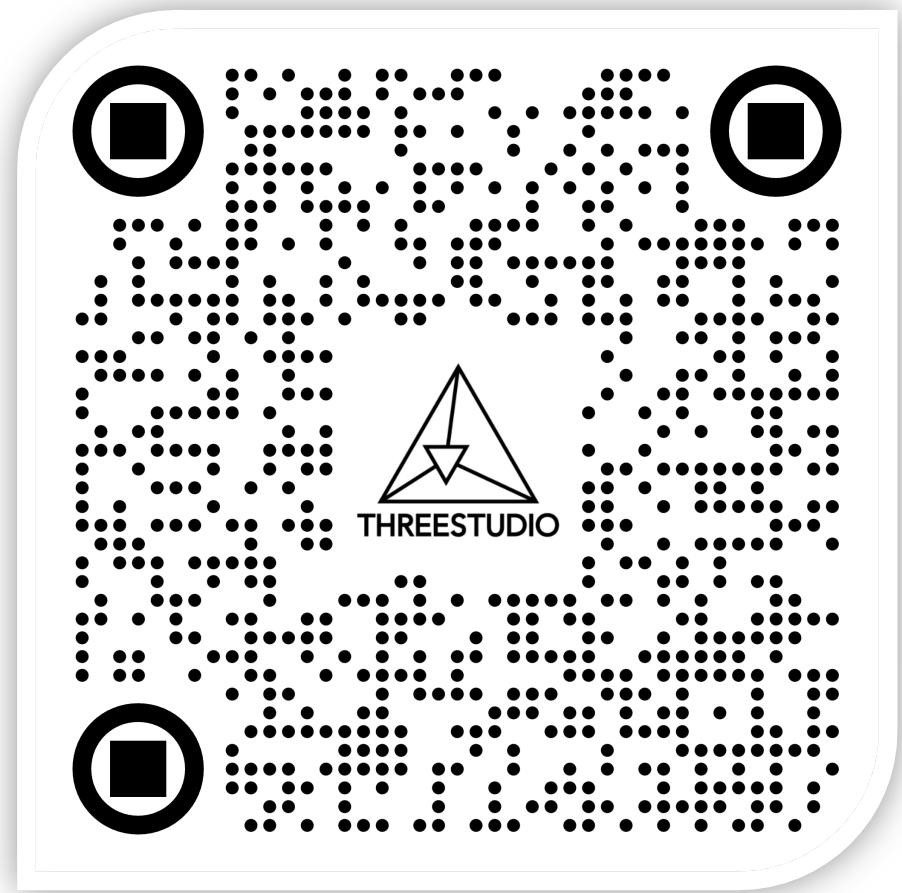


# threestudio: a modular framework for diffusion-guided 3D generation



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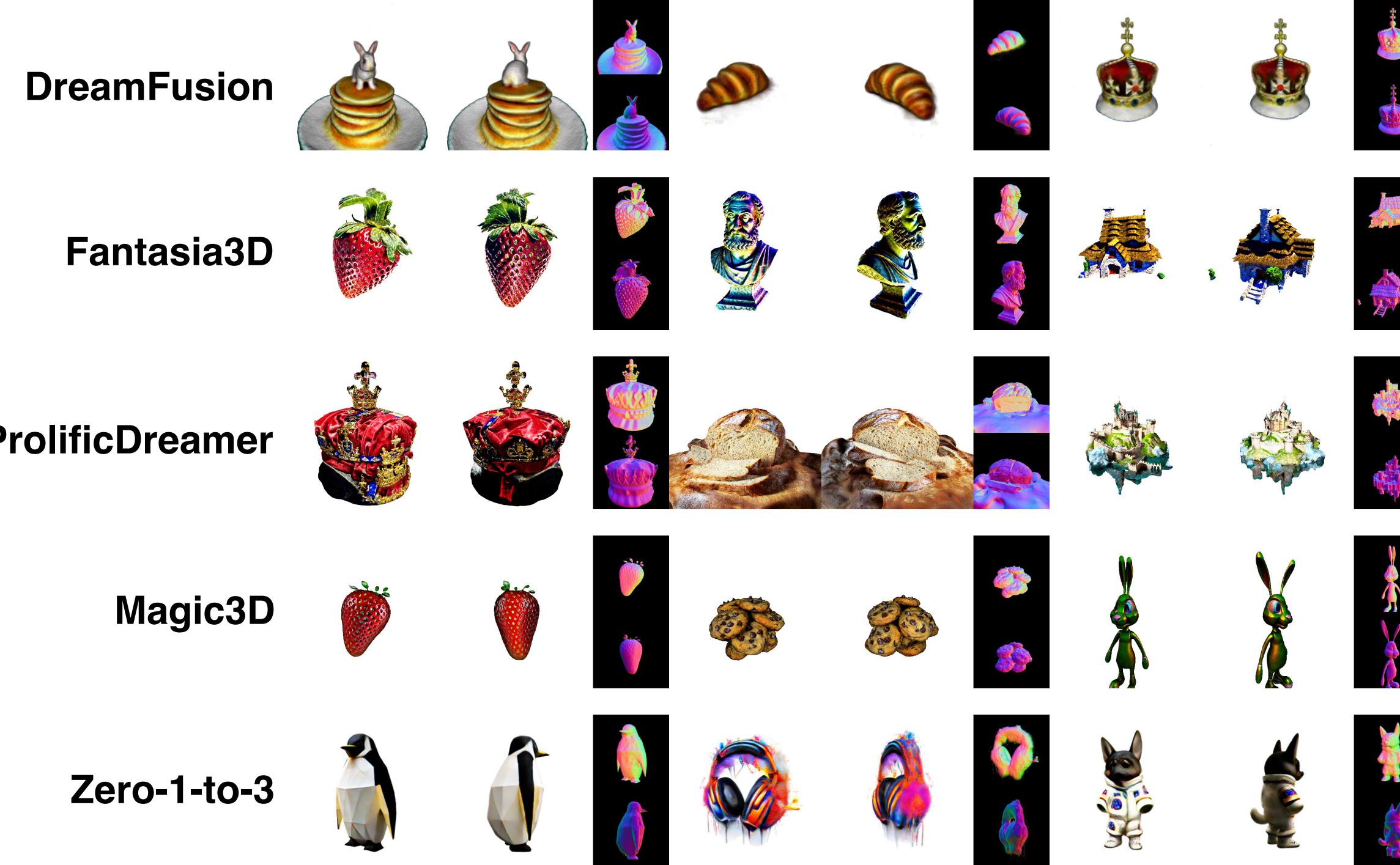


## Highlights

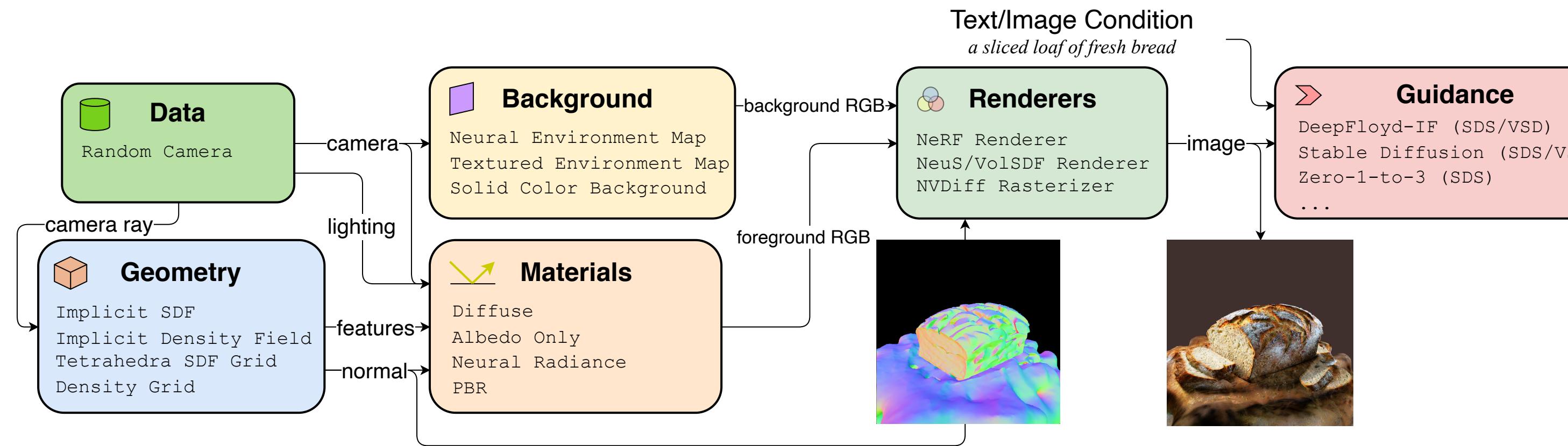
*threestudio* is an open-source modular framework for 3D content generation by leveraging 2D diffusion models.

- ◆ **Modular**  
combine different components to form a pipeline
- ◆ **Extensible**  
customize components and pipelines
- ◆ **Flexible**  
chain different pipelines for better performance
- ◆ **Configurable**  
build custom pipelines without changing the code

## Gallery



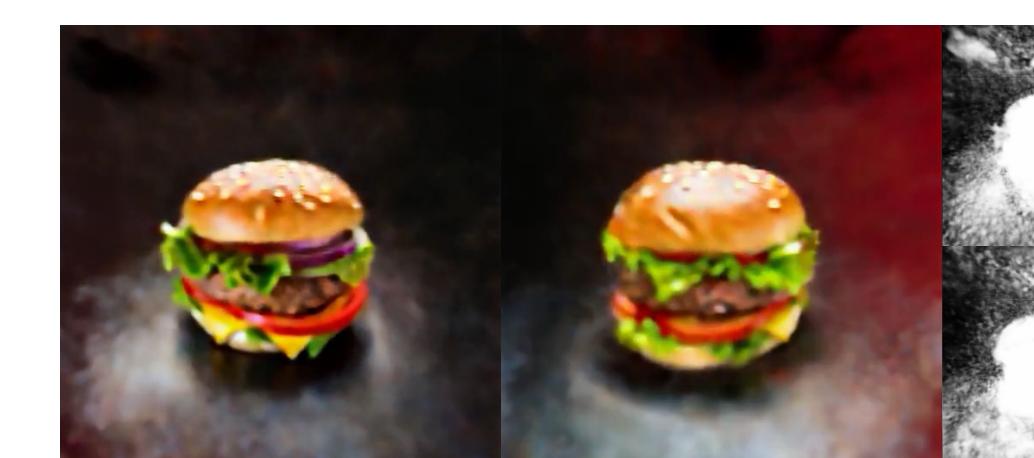
## Framework



## Explore New Pipelines



TextMesh → Fantasia3D → ProlificDreamer



Density Grid + VSD



VolSDF + VSD

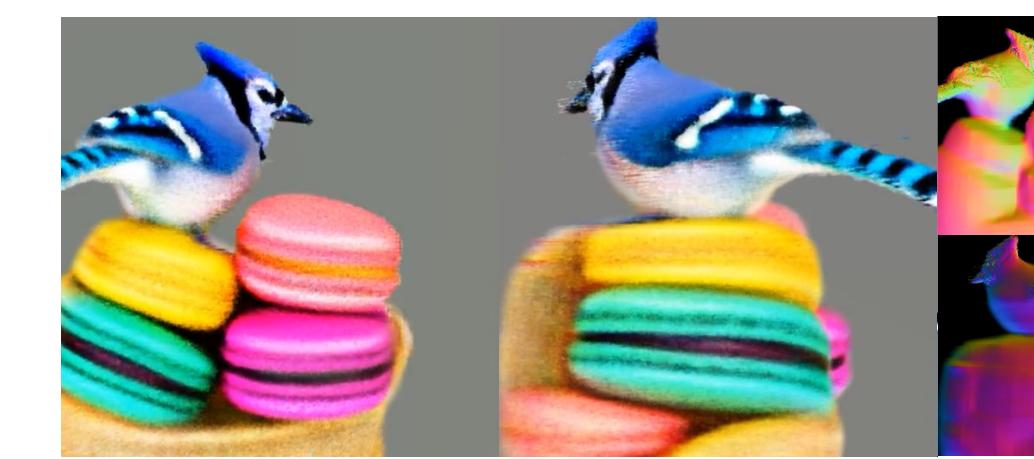


Image-to-3D using DeepFloyd-IF

## Configuration Snapshot

```

data_type: random-camera-datamodule
data:
  camera_distance_range: [1.5, 2.0]
  fovy_range: [40, 70]
  elevation_range: [-10, 45]

system_type: dreamfusion-system
system:
  geometry_type: implicit-volume
  geometry:
    radius: 2.0
    normal_type: analytic
    density_activation: softplus
    ...

material_type: diffuse-with-point-light-material
material:
  albedo_activation: sigmoid

background_type: neural-environment-map-background
background:
  color_activation: sigmoid

render_type: nerf-volume-renderer
renderer:
  radius: ${system.geometry.radius}
  num_samples_per_ray: 512

prompt_processor_type: stable-diffusion-prompt-processor
prompt_processor:
  pretrained_model_name_or_path: stabilityai/stable-diffusion-2-1-base
  prompt: a delicious hamburger

guidance_type: stable-diffusion-guidance
guidance:
  pretrained_model_name_or_path: stabilityai/stable-diffusion-2-1-base
  guidance_scale: 100.
  weighting_strategy: sds

loss:
  lambda_sds: 1.
  lambda_orient: [0, 10., 1000., 5000]
  lambda_sparsity: 1.
  lambda_opaque: 0.

```