テキストから3D描画

```python
1 # パッケージのインストール
2 !git clone https://github.com/openai/point-e.git
3 %cd point-e
4 !pip install .
```

```python
1 # パッケージのインポート
2 import torch
3 from tqdm.auto import tqdm
4 from point_e.diffusion.configs import DIFFUSION_CONFIGS, diffusion_from_config
5 from point_e.diffusion.sampler import PointCloudSampler
6 from point_e.models.download import load_checkpoint
7 from point_e.models.configs import MODEL_CONFIGS, model_from_config
8 from point_e.util.plotting import plot_point_cloud
```

```python
1 # モデルの準備
2 device = torch.device('cuda' if torch.cuda.is_available() else 'cpu')
3
4 print('creating base model...')
5 base_name = 'base40M-textvec'
6 base_model = model_from_config(MODEL_CONFIGS[base_name], device)
7 base_model.eval()
8 base_diffusion = diffusion_from_config(DIFFUSION_CONFIGS[base_name])
9
10 print('creating upsample model...')
11 upsampler_model = model_from_config(MODEL_CONFIGS['upsample'], device)
12 upsampler_model.eval()
13 upsampler_diffusion = diffusion_from_config(DIFFUSION_CONFIGS['upsample'])
14
15 print('downloading base checkpoint...')
16 base_model.load_state_dict(load_checkpoint(base_name, device))
17
18 print('downloading upsampler checkpoint...')
19 upsampler_model.load_state_dict(load_checkpoint('upsample', device))
```

```python
1 # サンプラーの準備
2 sampler = PointCloudSampler(
3     device=device,
4     models=[base_model, upsampler_model],
5     diffusions=[base_diffusion, upsampler_diffusion],
6     num_points=[1024, 4096 - 1024],
7     aux_channels=['R', 'G', 'B'],
8     guidance_scale=[3.0, 0.0],
9     model_kwargs_key_filter=('texts', ''), # アップサンプラーをまったく調整しない
10 )
```
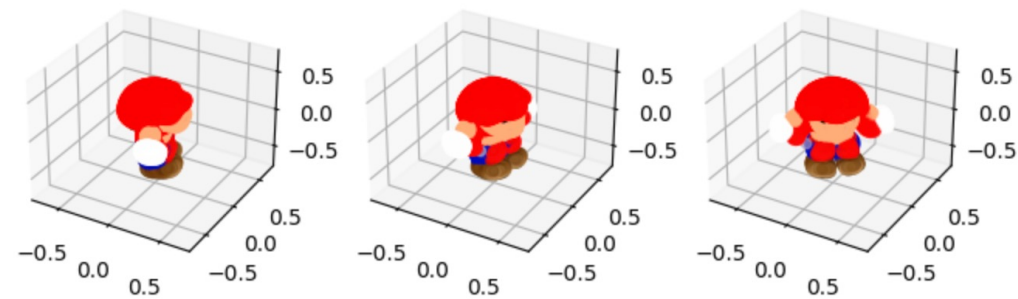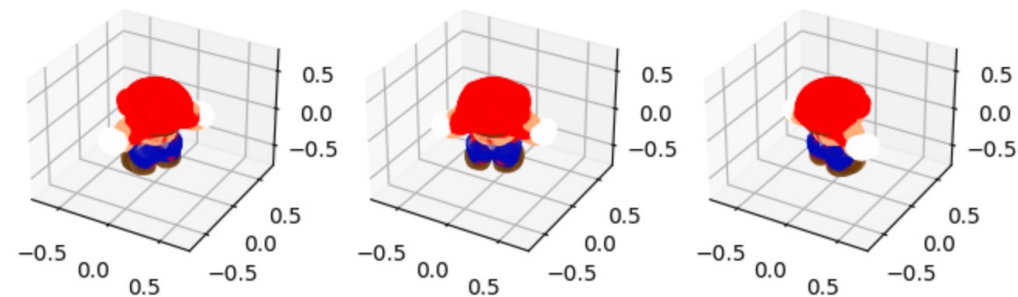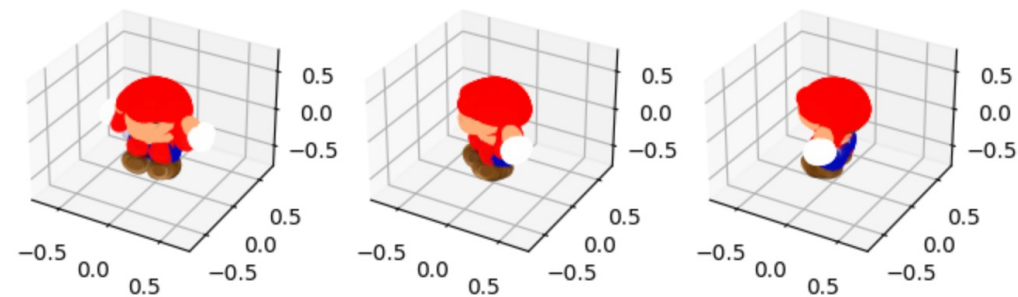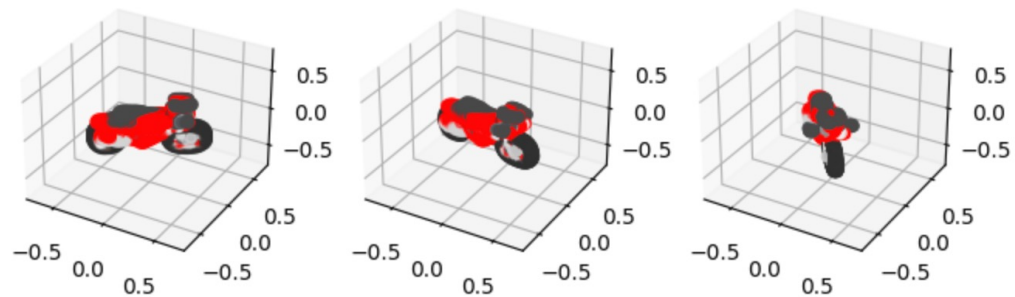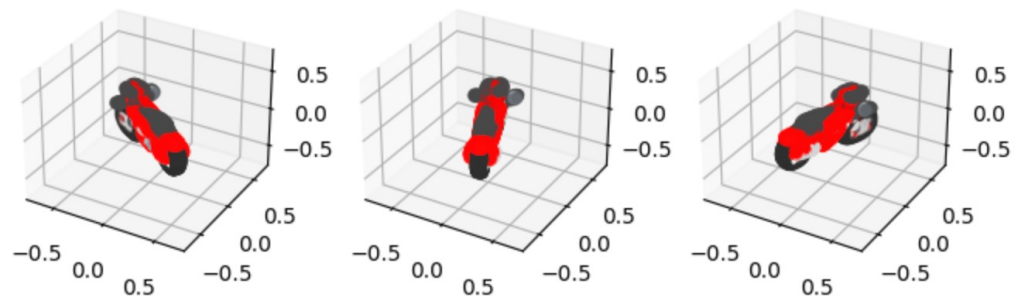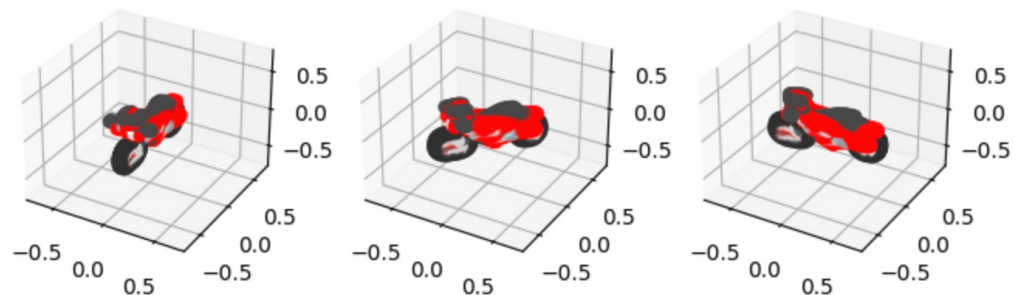
```python
1 # テキストの準備
2 prompt = 'a red motorcycle'
3
4 # 推論の実行
5 samples = None
6 for x in tqdm(sampler.sample_batch_progressive(batch_size=1, model_kwargs=dict(texts=[prompt]))):
7     samples = x
```
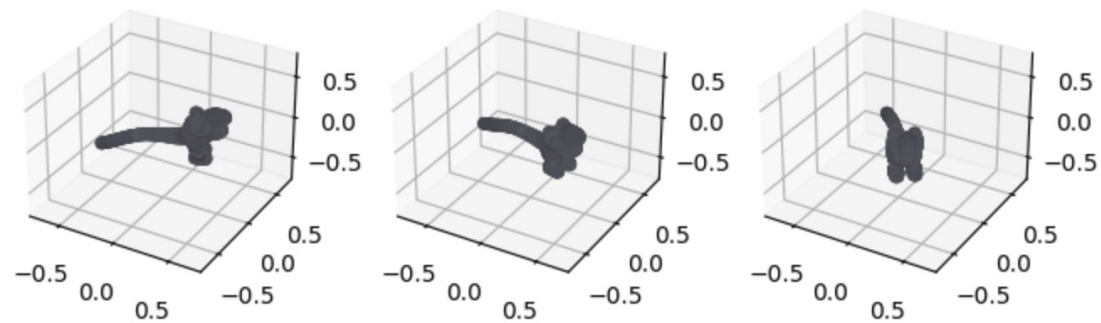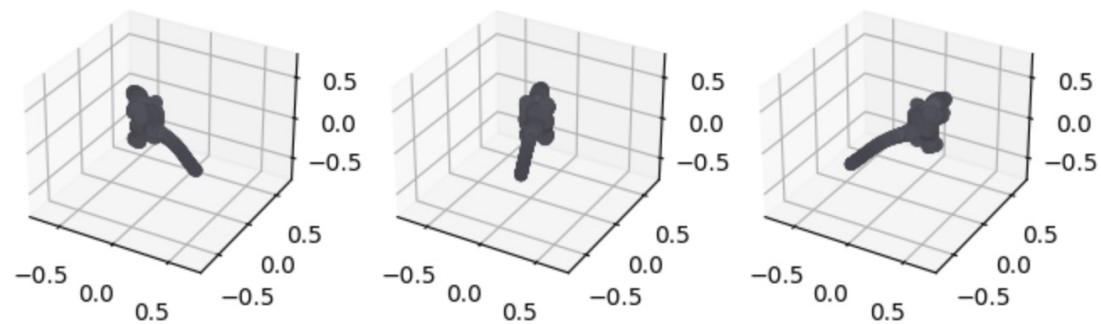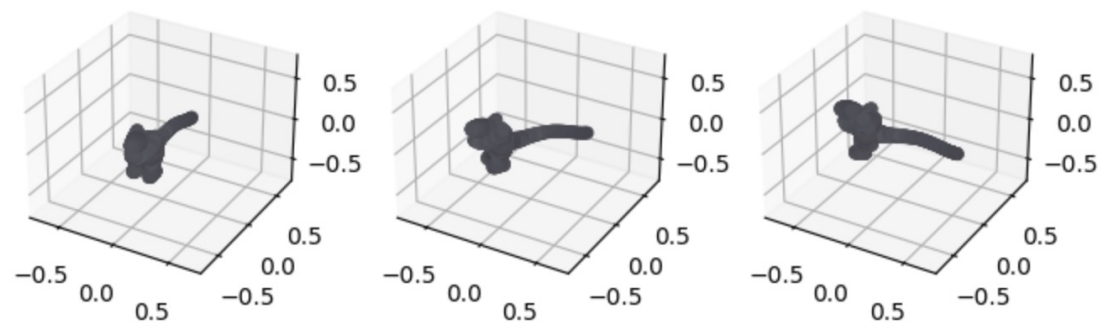
```
1  # 3Dポイントクラウドの表示
2  pc = sampler.output_to_point_clouds(samples)[0]
3  fig = plot_point_cloud(pc, grid_size=3, fixed_bounds=((-0.75, -0.75, -0.75),(0.75, 0.75, 0.75)))
```

prompt = 'MARIO'

prompt = 'Godzilla'

prompt = 'Banana'