Supplementary Material

1. Data preparation

See "data-preparation.pdf".

2. Network structures and training configurations

See "network-structure.pdf". All codes and trained models will be released later.

3. Toy experiments (extension of Figure 3)

See folder "TOY". The document "toy-experiments.pdf" provides several toy experiments to compare the different features learned by CNN-based models and implicit-decoder-based models.

4. Auto-encoding 3D shapes (extension of Figure 4)

See folder "IM-AE". Each image contains the visual comparisons of the first 16 shapes (sorted by name) from the testing set of that category.

5. 3D shape generation and interpolation (extension of Figure 6, videos of interpolations, etc.)

See folder "IM-GAN-3D". We provide:
(a) 16 randomly generated shapes for each category for each model.
(b) 4 samples comparing interpolations in IM-AE and IM-GAN latent spaces.
(c) IM-GAN interpolation videos of all 5 categories. Chair and table were trained at 64^3 resolution and others at 128^3. All shapes were retrieved using marching cubes at 256^3 resolution.
(d) CNN-GAN interpolation videos of chair and table for comparison (trained and sampled at 64^3).

6. 2D shape generation and interpolation (extension of Figure 7 and videos of font interpolations)

See folder "IM-GAN-2D". We provide 1024 randomly generated samples for each model. We also include a video showing font interpolations with IM-GAN trained on 64^2 data and sampled at 128^2. All videos were heavily compressed to fit the size limit of the supplementary material so the quality may be affected.

7. Single-view 3D reconstruction (extension of Figure 8 and evaluation results by chamfer distance)

See folder "IM-SVR". Each image contains the visual comparisons of the first 16 shapes (sorted by name) from the testing set of that category.