

# CAPNet: Continuous Approximation Projection For 3D Point Cloud Reconstruction Using 2D Supervision: Supplementary Material

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## Network Architecture

S.No.	Layer	Filter Size/ Stride	Output Size
1	conv	3x3/1	64x64x32
2	conv	3x3/1	64x64x32
3	conv	3x3/2	32x32x64
4	conv	3x3/1	32x32x64
5	conv	3x3/1	32x32x64
6	conv	3x3/2	16x16x128
7	conv	3x3/1	16x16x128
8	conv	3x3/1	16x16x128
9	conv	3x3/2	8x8x256
10	conv	3x3/1	8x8x256
11	conv	3x3/1	8x8x256
16	conv	5x5/2	4x4x512
17	linear	-	128

Table 1: Image Encoder Architecture

S.No.	Layer	Output Size
1	linear	256
2	linear	256
3	linear	1024*3

Table 2: Decoder Architecture

## Loss Weighing Strategy

$\lambda=0.5$	$\lambda=1$	$\lambda=5$
4.63	<b>4.42</b>	5.3

Table 3: Chamfer metric for models trained with different weightage  $\lambda$  (scaled by  $1e^4$ ) for  $\mathcal{L}_{\text{aff}}$  (Eqn.5, main paper). Based on this, we set  $\lambda$  to be 1 in all our experiments. During training,  $\lambda$  is reduced to 0.02 of its initial value upon loss saturation.

\*equal contribution

## 3D Reconstruction Results on ShapeNet and Pix3D Datasets

Qualitative results on ShapeNet dataset are shown in Fig. 1. Mutli-category experiment results are shown in Fig. 2. Fig. 3 presents the corresponding results on the real world pix3D dataset.

## Test Stage Optimization

Qualitative results for test stage optimization is presented in Fig. 4.

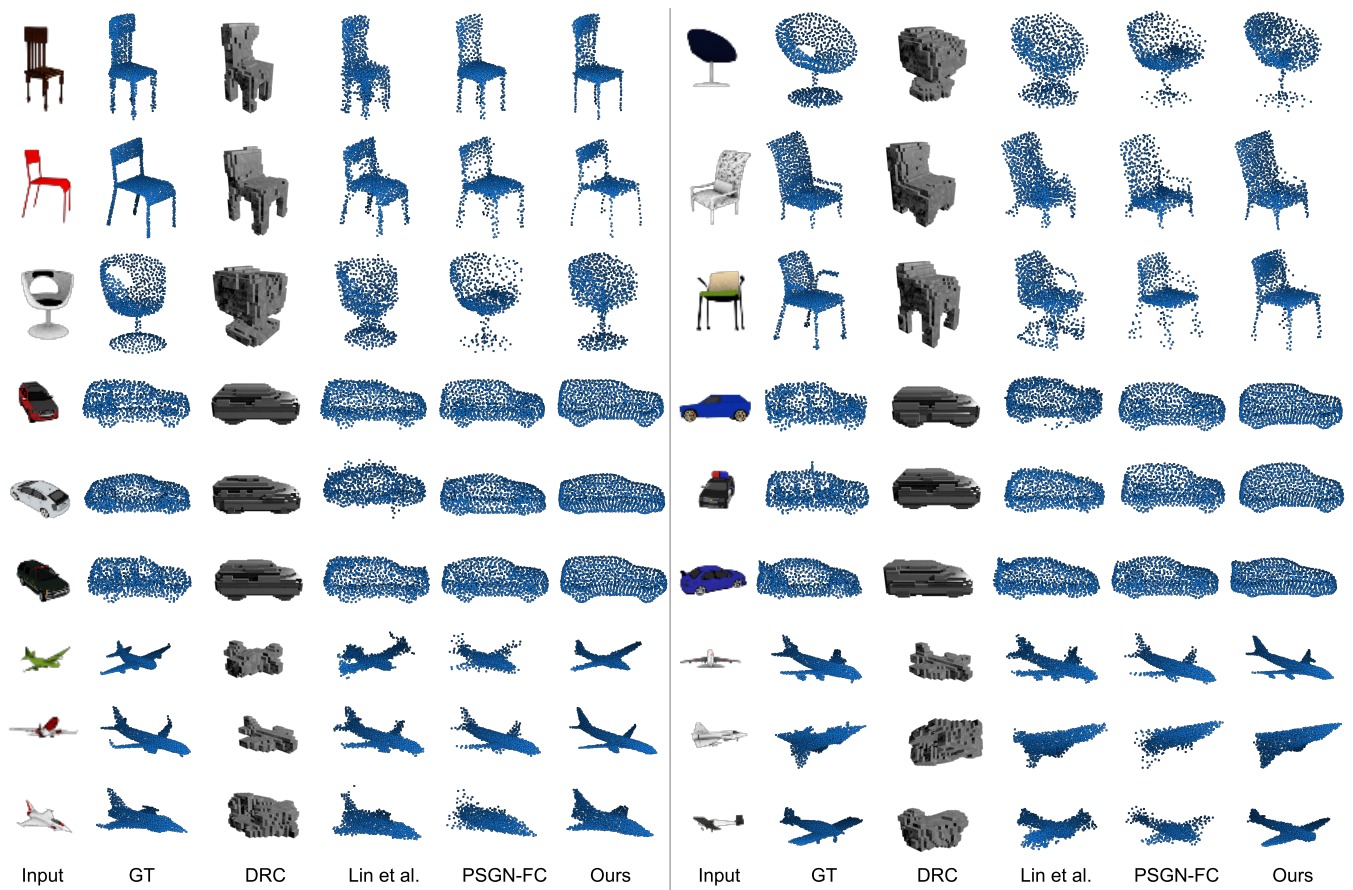


Figure 1: Qualitative comparison on ShapeNet dataset.

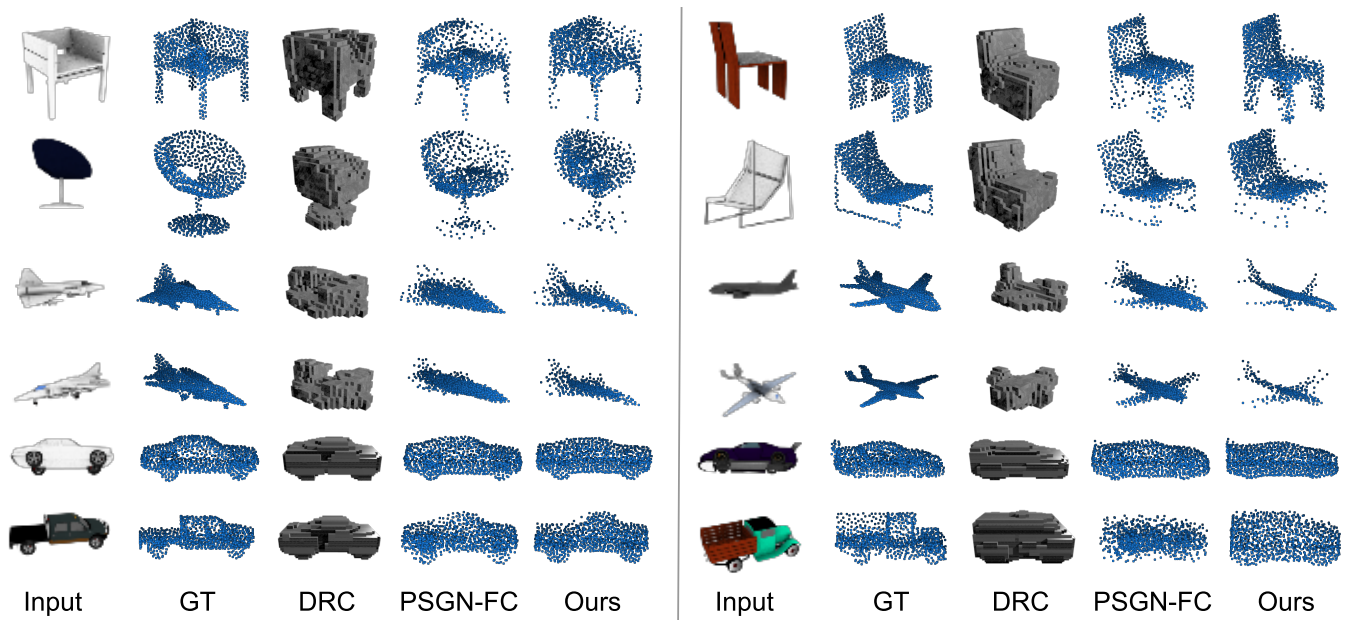


Figure 2: Qualitative comparison for multi-category network on ShapeNet dataset.

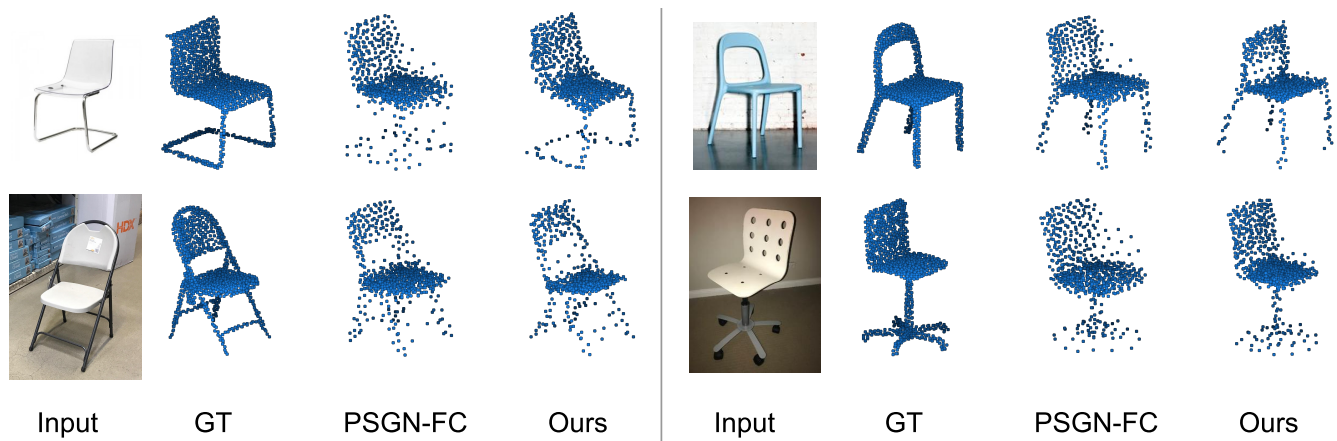


Figure 3: Qualitative comparison on Pix3D dataset.

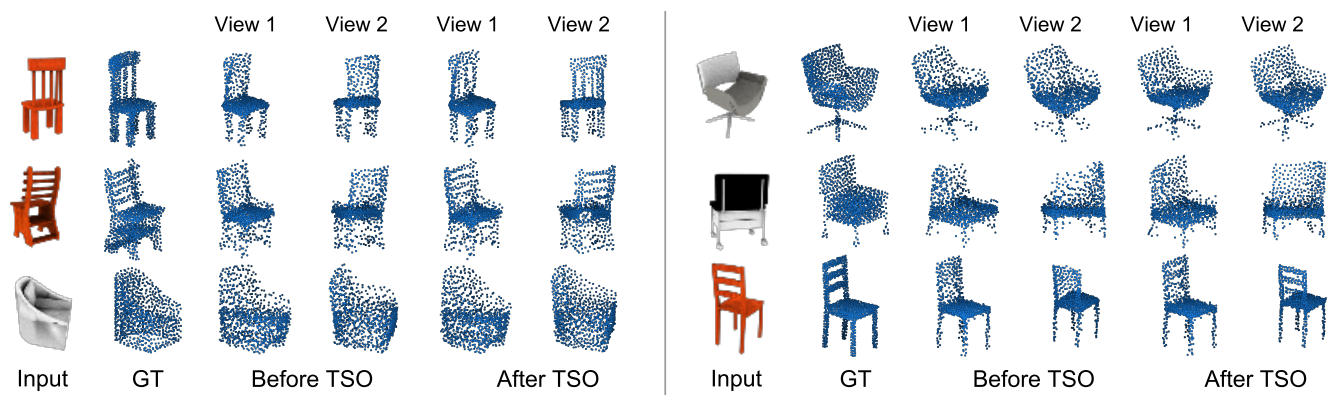


Figure 4: Qualitative results for test stage optimization.