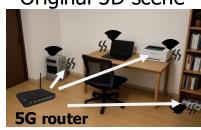
2D-3D Semantic Consistency and Normal-Guided Multi-View Geometric Constraint based 3D Inpainting for Indoor 5G Signal Analysis

魏 巍 池永研究室 修士課程修了

Background

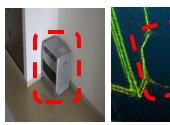
Original 3D scene

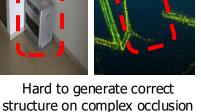


Clean 3D scene (Simulation baseline)

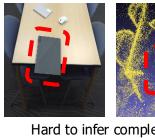


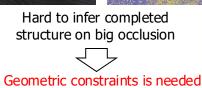
Challenges





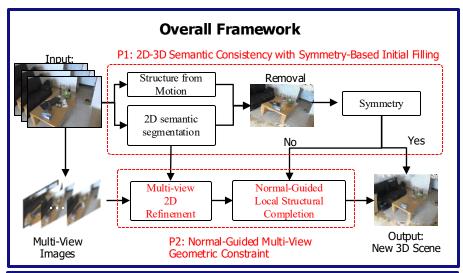
Sence understanding is needed

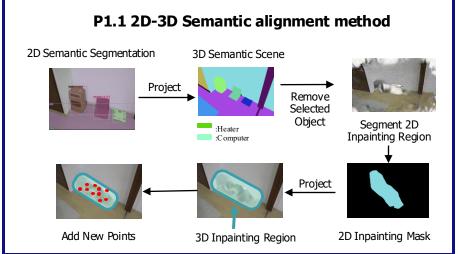


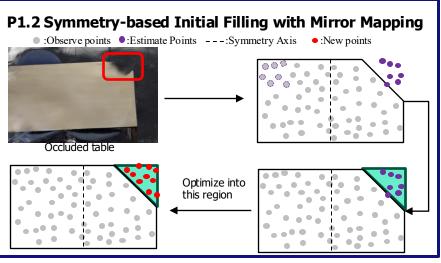


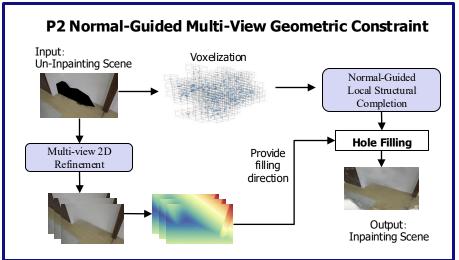
- Clean 3D scene without Remove digital selected object
- Simulate the signal
 - analysis
- Design a 3D Inpainting method for Indoor 5G Signal Analysis.

Proposals









Experiment Results

Metrics	Method	Simple	Complex	Overall
PC-SSIM	Baseline	0.66	0.58	0.62
	Baseline+P1	0.79	0.69	0.74
	Baseline+P1+P2	0.86	0.84	0.85
Structural Similarity Score	Baseline	0.68	0.55	0.61
	Baseline+P1	0.81	0.77	0.79
	Baseline+P1+P2	0.87	0.85	0.86

Conclusion

■ The proposed method improve the quality of inpainting result (improve Point Cloud Structural Similarity Index from 0.62 to 0.85, raise Structure Similarity Score from 0.61 to 0.86 comparing to baseline).

