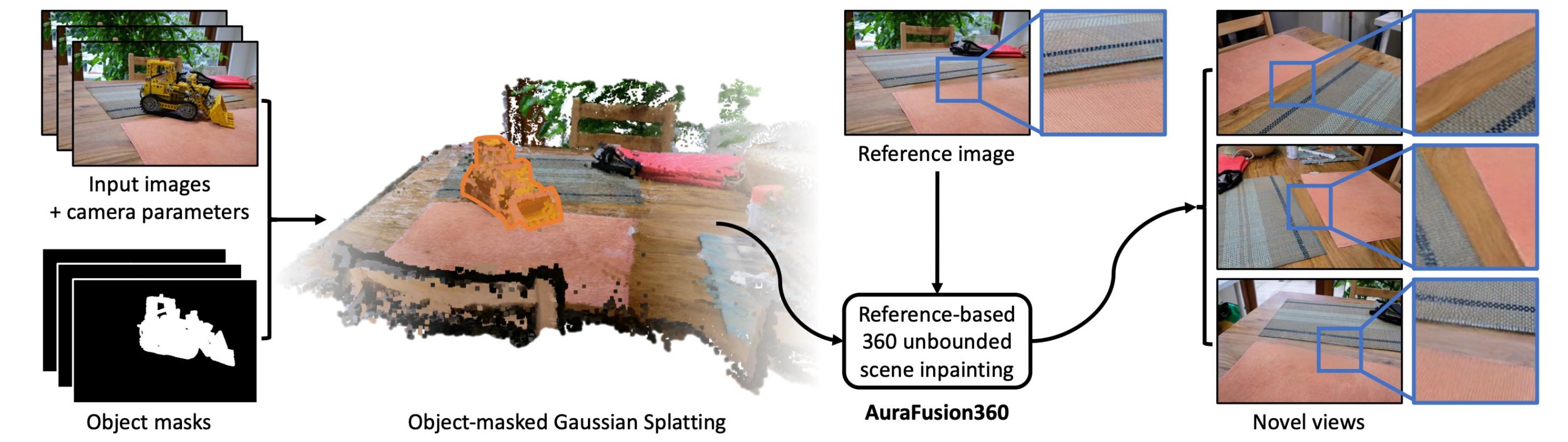


Introduction

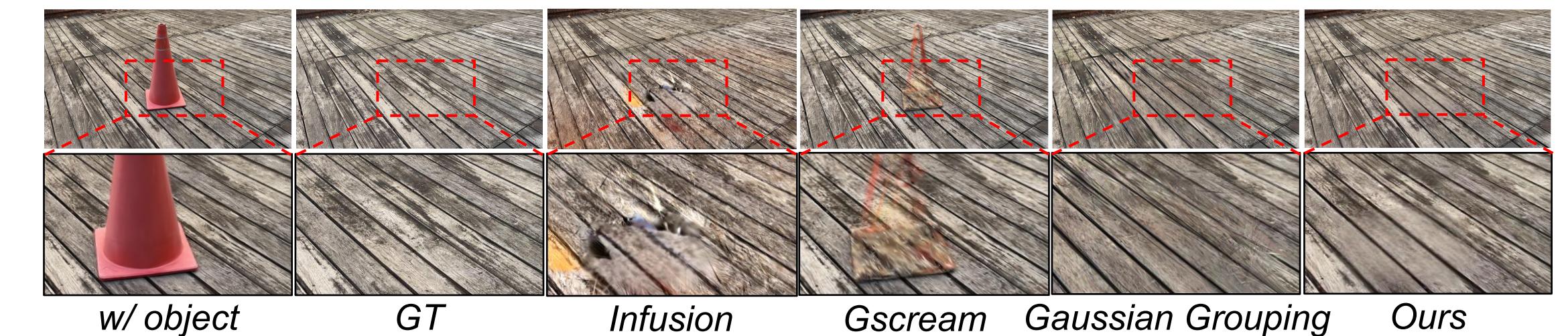
We propose **AuraFusion360**, a **reference-based 3D object removal method for unbounded 360° scenes**. We train a masked Gaussian Splatting model, remove objects based on learned mask attributes, and inpaint missing regions guided by a reference image.



Motivation

Challenges:

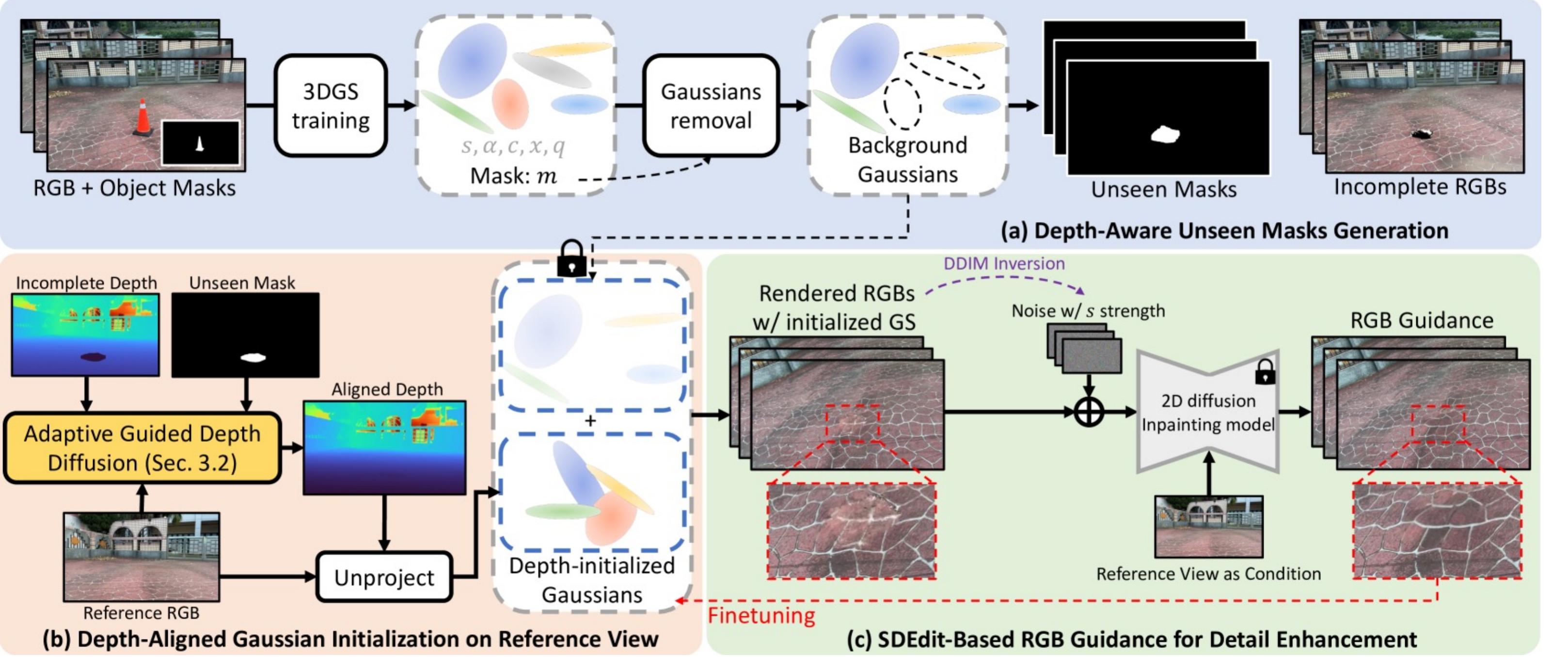
- Most 3D inpainting methods rely on per-view 2D inpainting, leading to multi-view inconsistencies under large 360° viewpoint changes.
- Masked attribute training aids removal, but the key challenge is finding fully occluded regions and projecting reference cues for consistent inpainting.
- No evaluation benchmark under 360° scenarios.



Contributions:

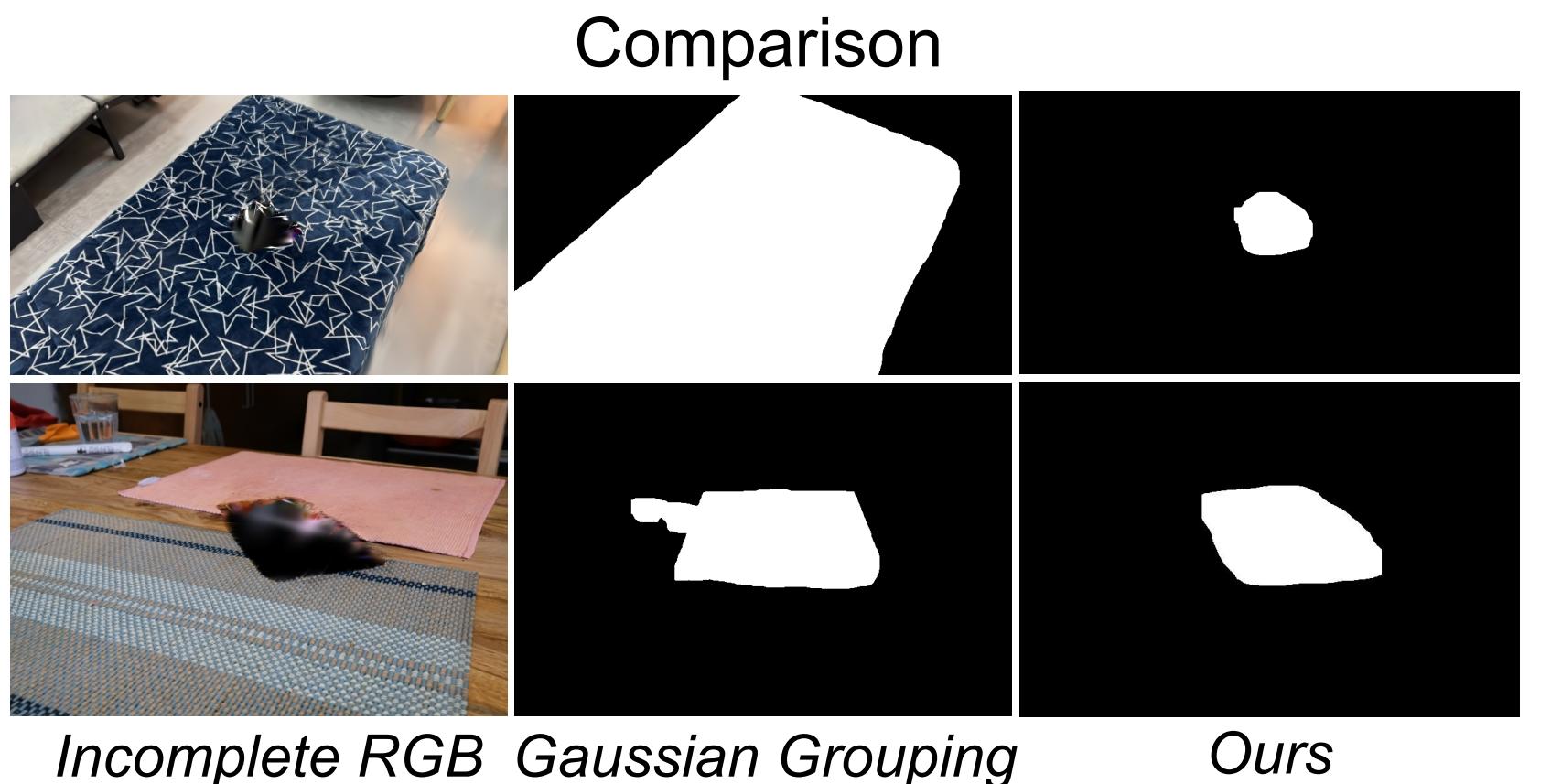
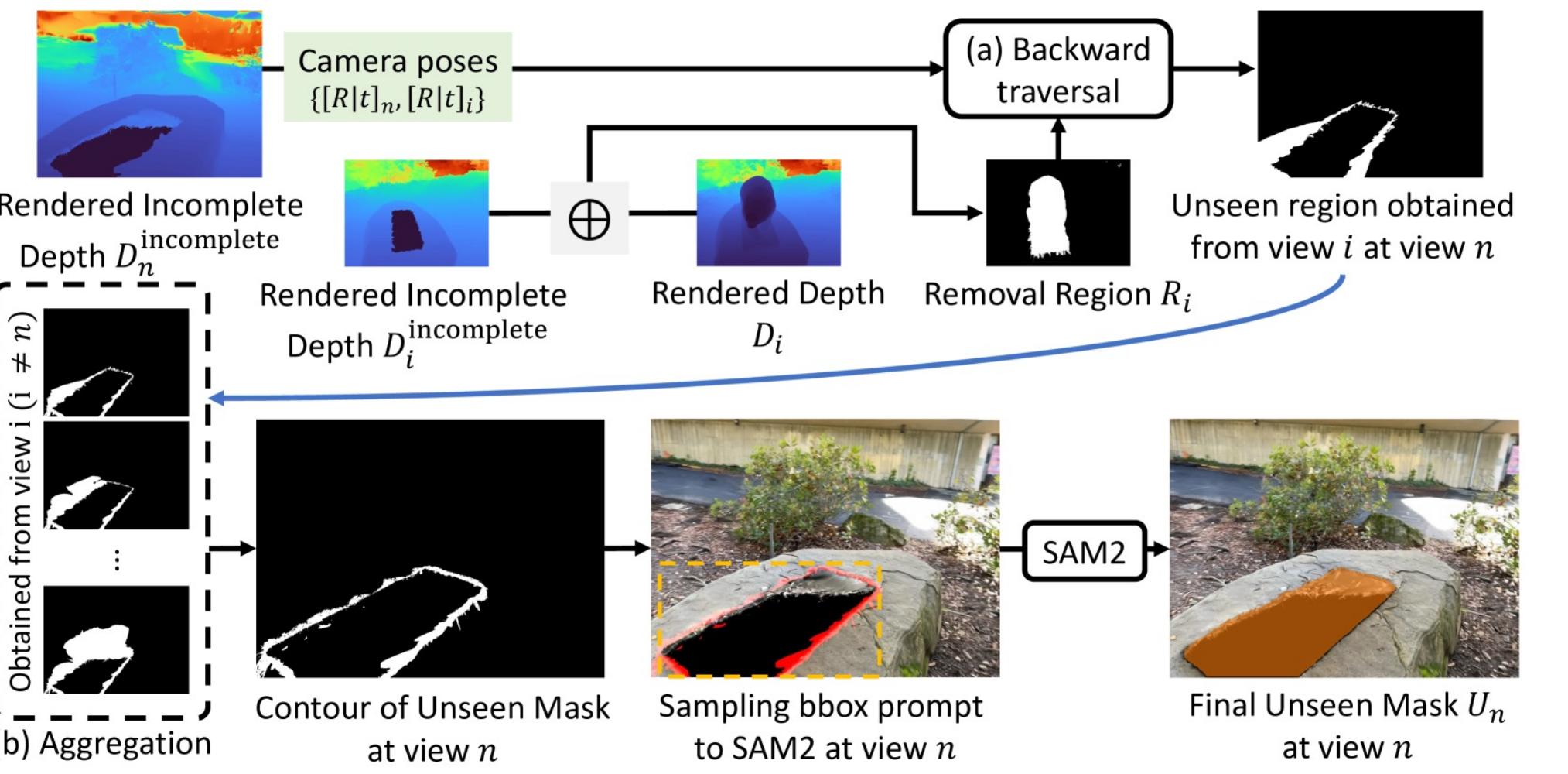
- Detecting fully occluded regions via depth-aware unseen mask generation.
- Zero-shot depth alignment (AGDD) for geometry and appearance initialization in unseen regions, with SDEdit-based multi-view detail enhancement.
- **360-USID**: First 360° inpainting benchmark with a real-world capture protocol.

Pipeline Overview

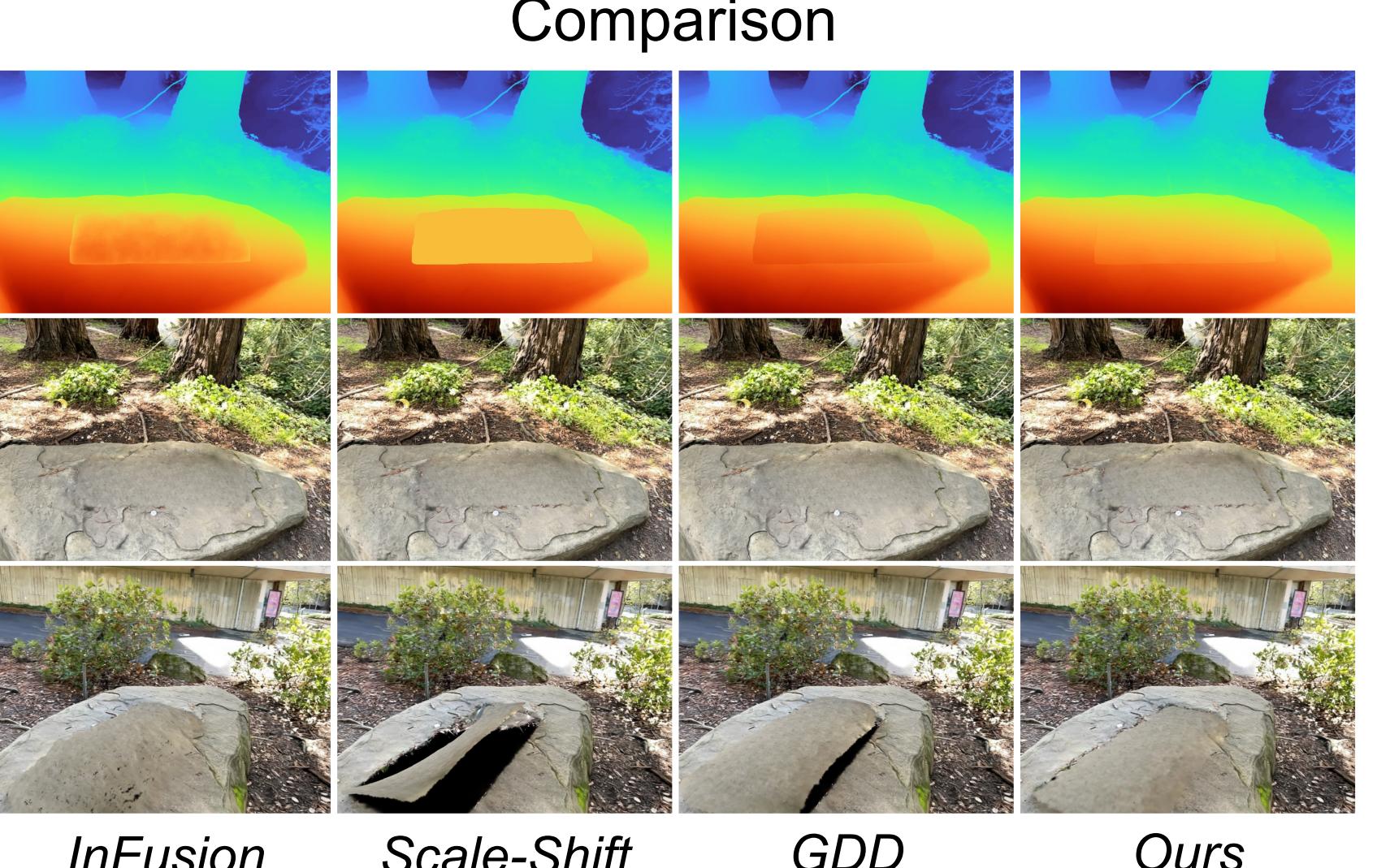
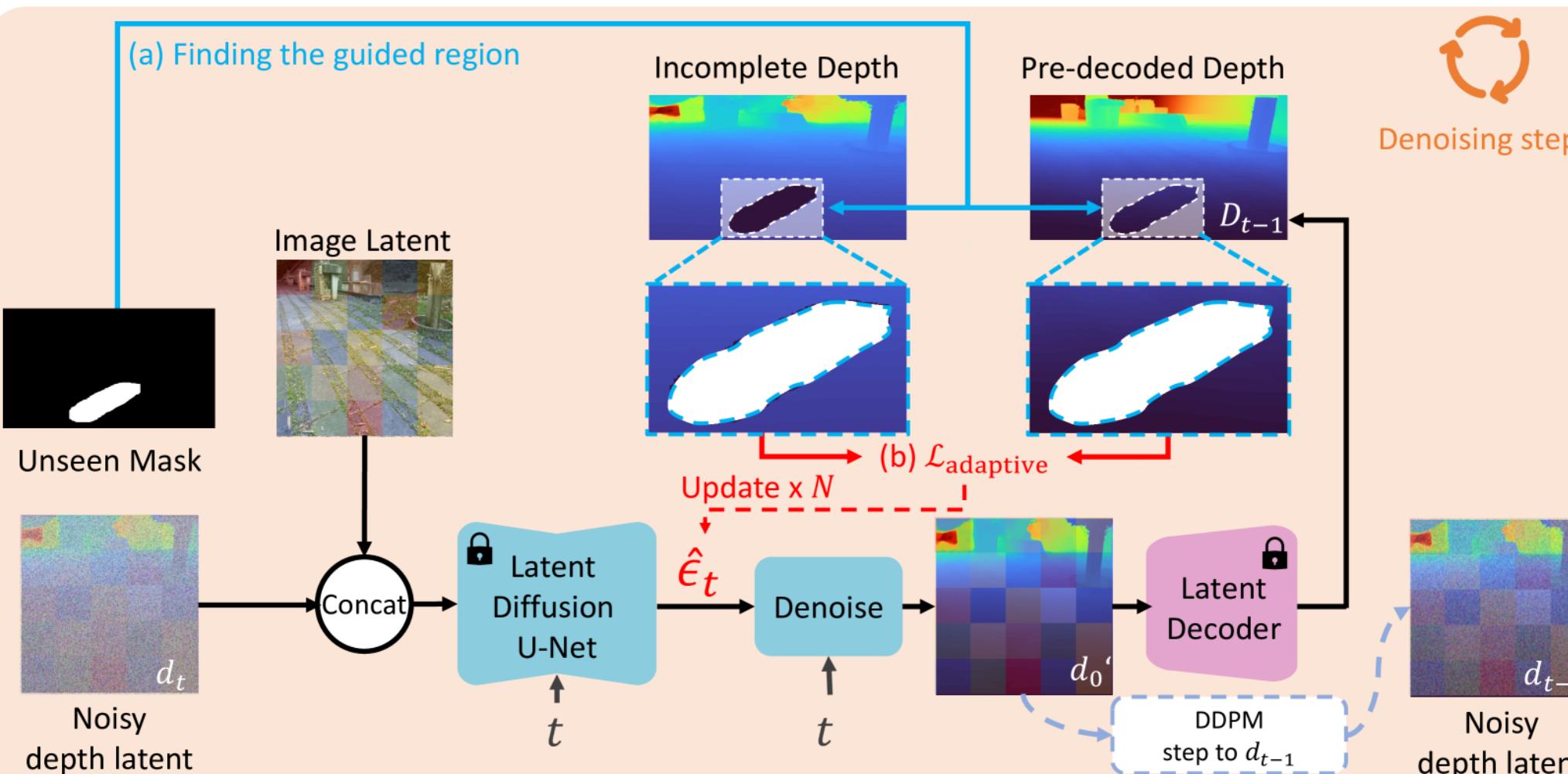


Method

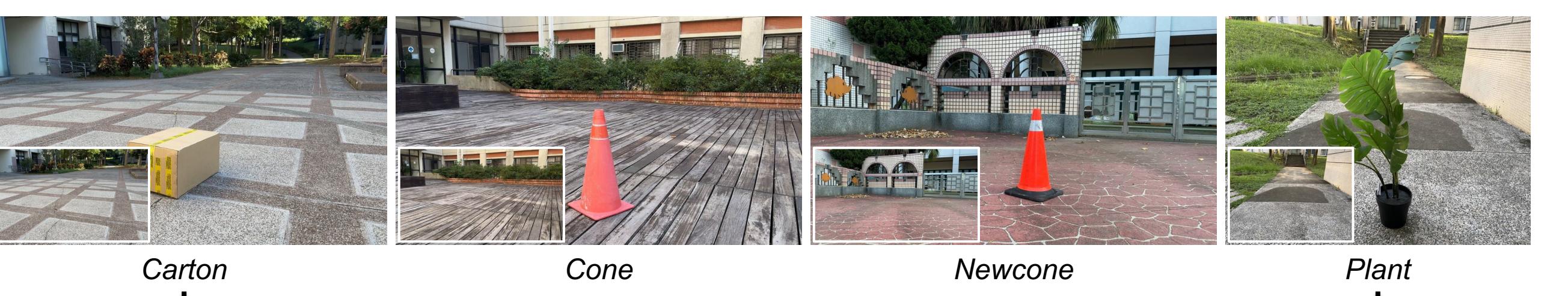
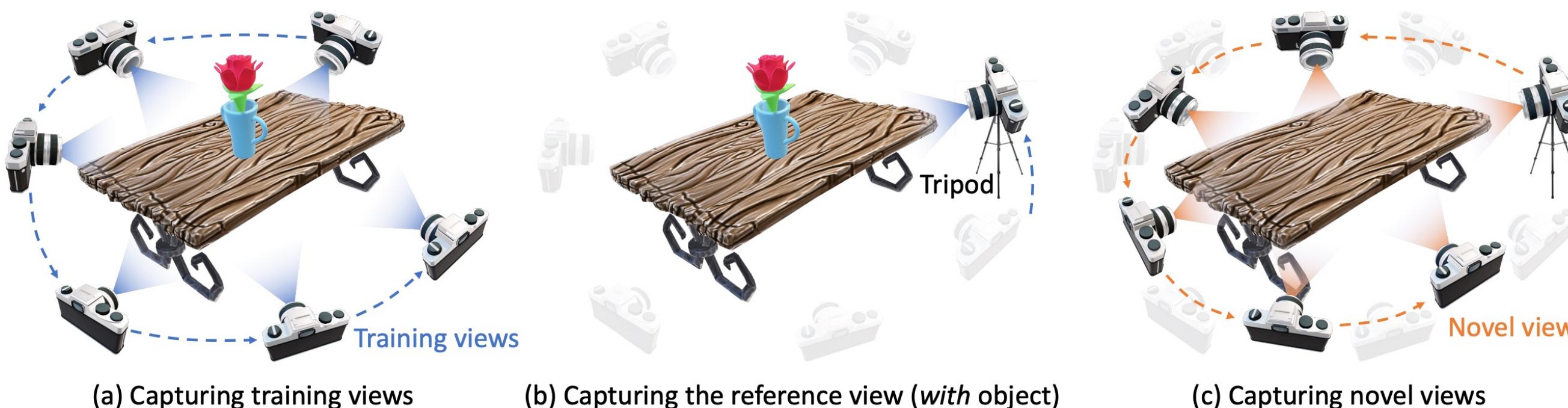
(a) Depth-Aware Unseen Mask Generation



(b) AGDD for Depth Inpainting



Dataset & Capture Protocol of 360-USID



Scene	Training views	GT novel views	
		Carton	Cone
Carton	186	36	
Cone	183	27	
Cookie	185	34	
Newcone	191	34	
Plant	184	30	
Skateboard	187	34	
Sunflower	187	35	

Qualitative Results

