

DOC-Depth: A novel approach for dense depth ground truth generation

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Main takeaways

- **DOC-Depth** produces **high-quality, fully dense depth maps** from LiDAR data, overcoming the limitations of sparse depth annotations.
 - **DOC classifies dynamic object**, ensuring accurate depth reconstruction in dynamic environments.
 - **DOC-Depth is learning-free, scalable, and agnostic to LiDAR sensors.** It is suitable for large-scale depth dataset generation.
 - All software components and the fully-dense KITTI annotations are publicly available.

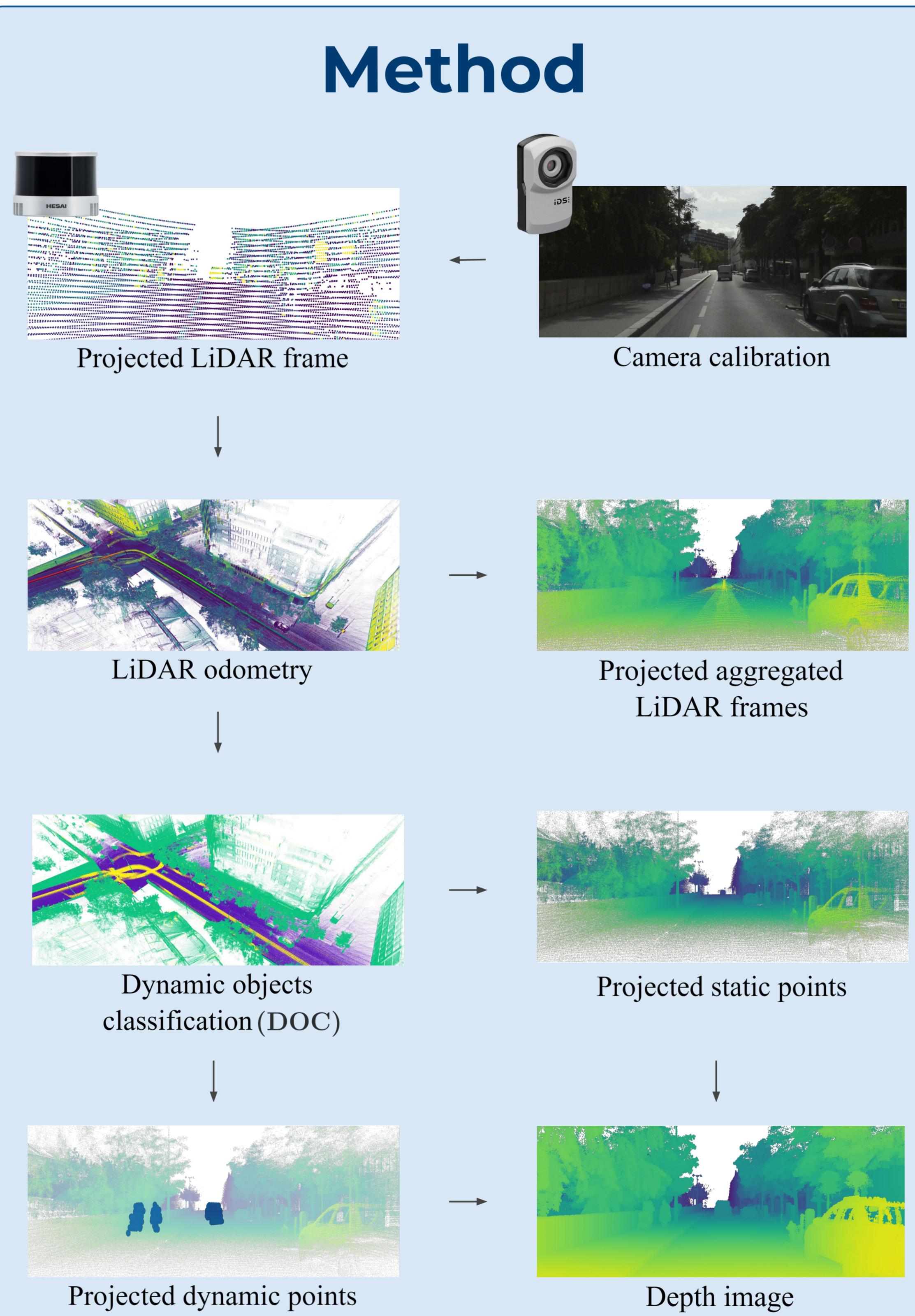


Project page

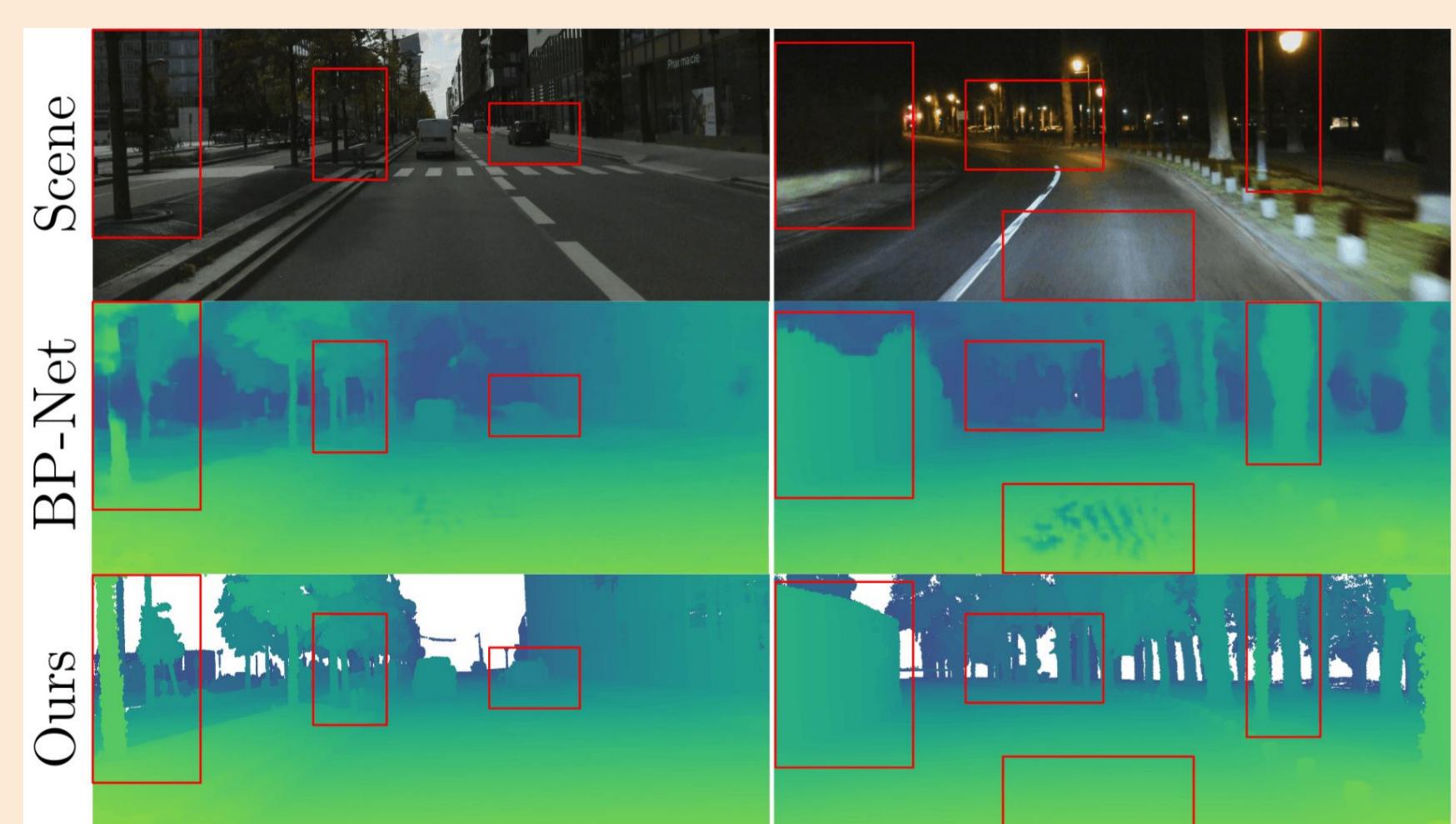
Code

Motivation

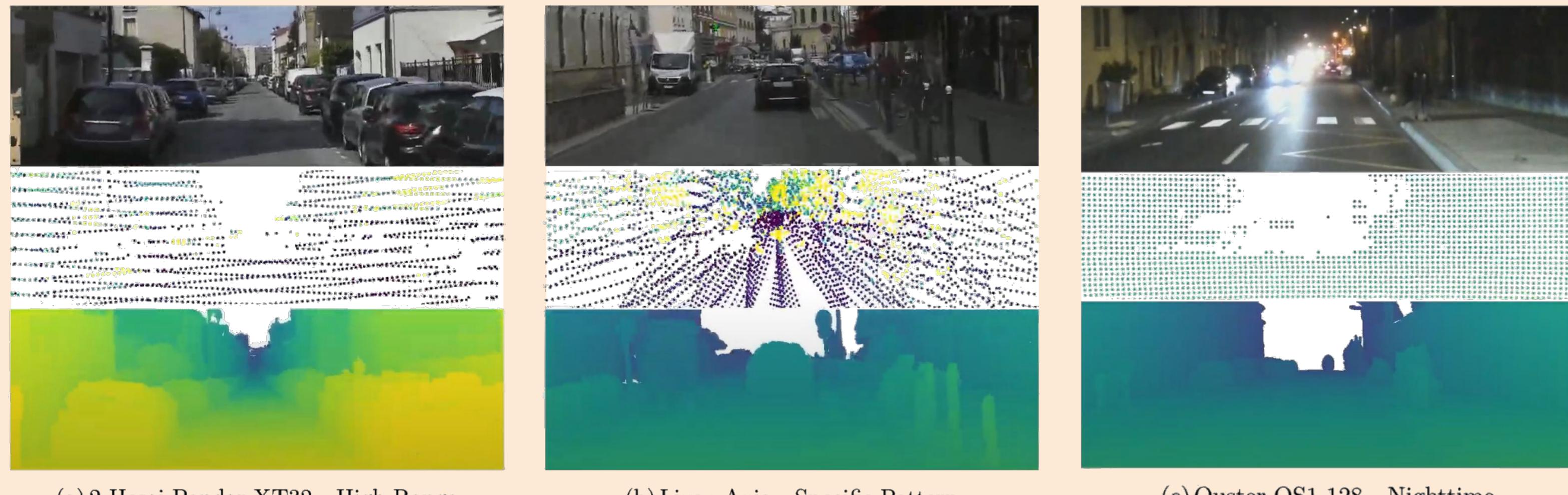
- Depth information is essential for many applications in robotics and autonomous driving.
 - Existing datasets rely on sparse measurement from LiDAR. Available densification methods lead to inaccuracies.
 - Using dense depth ensures better guidance for downstream tasks while being more data-efficient.



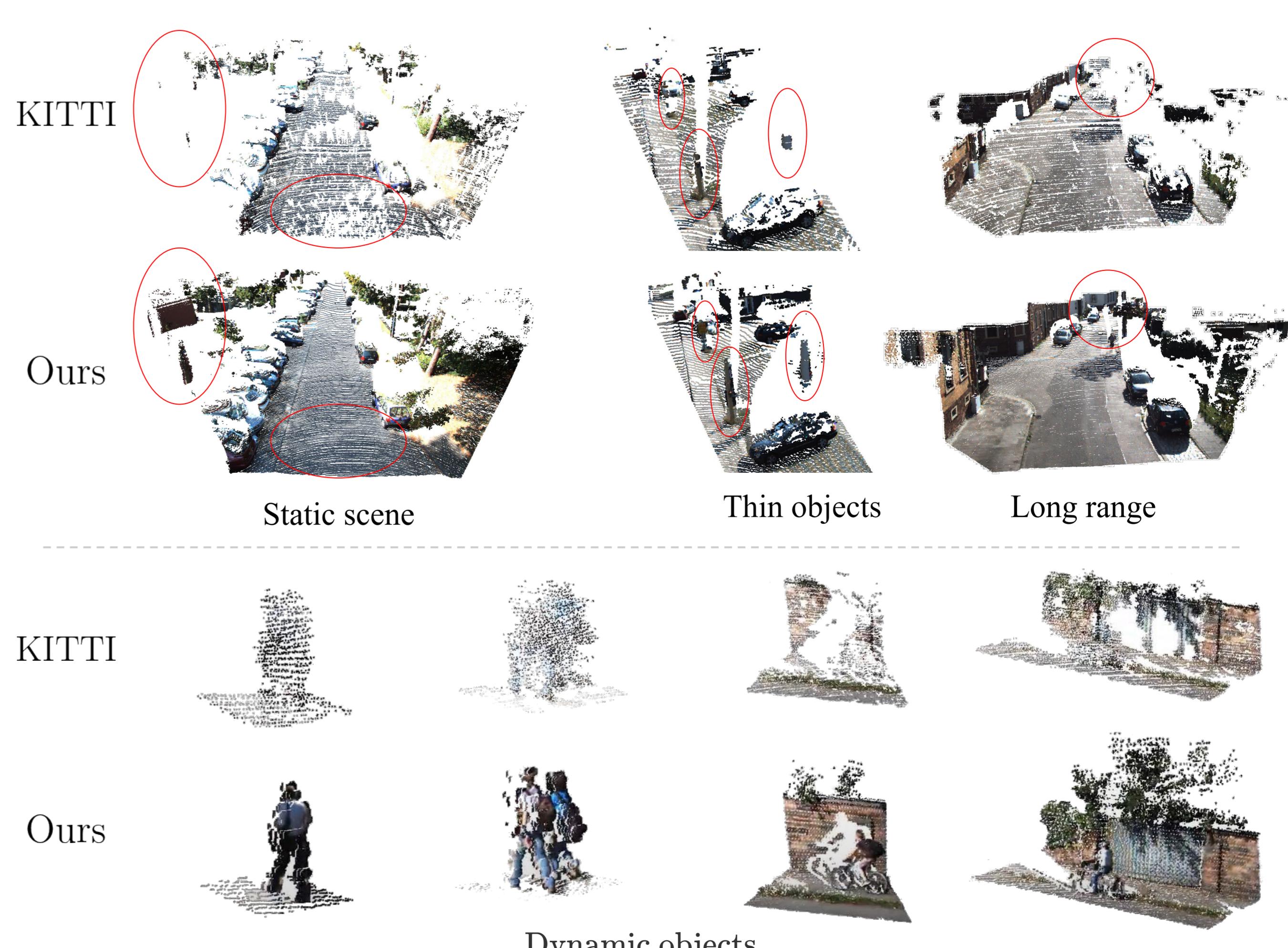
Comparison to AI depth completion



LiDAR-agnostic method



Comparison to KITTI



Scalable dataset generation

LiDAR	Area	Recording Time	Processing Time	# Depth Map	Density
OS1-128	City / Country roads	30 min	111 min ($\times 3.7$)	13,700	79%
2 Pandar-XT32	City / Highway	41 min	128 min ($\times 3.1$)	15,500	76%
Avia	City	14 min	24 min ($\times 2.2$)	3,200	86%