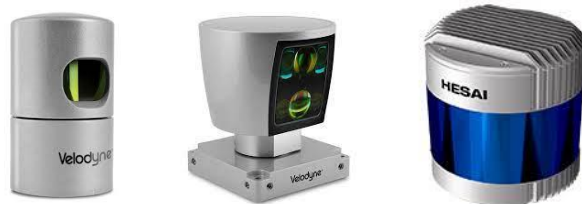


SimBusters: Bridging Simulation Gaps in Intelligent Vehicles Perception

Alberto Justo, Javier Araluce, Javier Romera, Mario Rodriguez-Arozamena, Leonardo Gonzalez and Sergio Diaz

Contributions

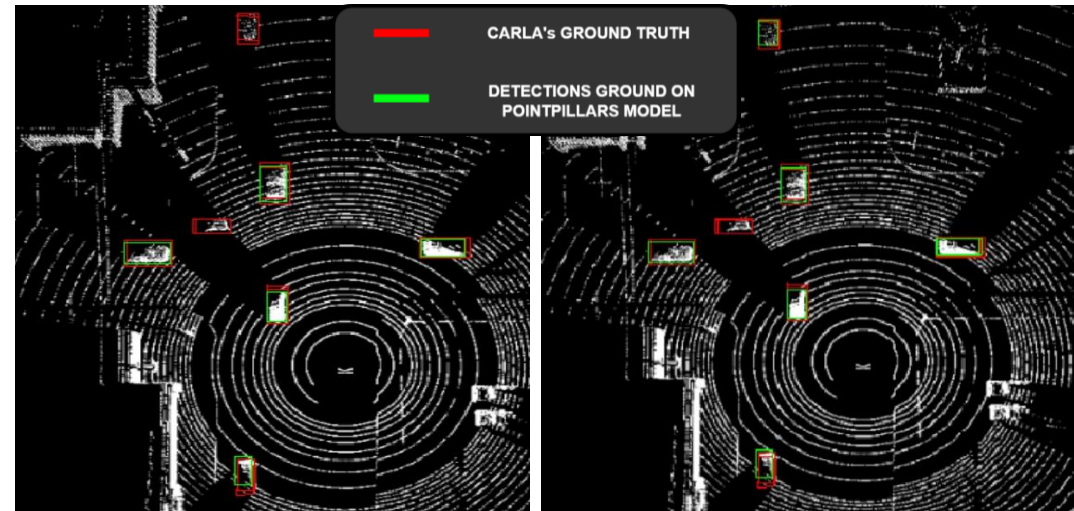
- *Pretrained model (PointPillars) in real-world datasets (KITTI[1], NuScenes[2] and Pandaset[3])*
- *Real2Sim Domain Adaptation*
- *Ground Truth Pointcloud Clustering method for evaluation*
- *Evaluation in PCSim library, analogous sensors used in real-world datasets*



Future works

More representative baseline (3D detectors, LiDAR models, datasets)

Sim2Real adaptations



DATASET	PCSim LiDAR	DA	IoU	mAP @ 0.7
KITTI	HDL-64	-	4.29 %	12.34 %
	HDL-64	Real2Sim	1.42 %	10.26 %
NuScenes	HDL-32	-	8.33 %	13.23 %
	HDL-32	Real2Sim	8.33 %	13.23 %
	CARLA-32	-	9.52 %	20.58 %
PandaSet	CARLA-32	Real2Sim	9.52 %	20.58 %
	Pandar64	-	2.27 %	8.45 %
	Pandar64	Real2Sim	0.0 %	2.81 %



Funded by the European Union

[1]: Geiger, Andreas, et al. "Are we ready for autonomous driving? The KITTI vision benchmark suite". *IEEE Conference on Computer Vision and Pattern Recognition*. 2012.

[2]: Holger, Caesar, et al. "nuScenes: A multimodal dataset for autonomous driving". *IEEE Conference on Computer Vision and Pattern Recognition*. 2020.

[3]: Xiao, Pengchuan et al. "PandaSet: Advanced Sensor Suite Dataset for Autonomous Driving". *IEEE International Intelligent Transportation Systems Conference (ITSC)*, 2021.



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Thank you for your attention!

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