

Normalizing Flow based Feature Synthesis for Outlier-aware Object Detection

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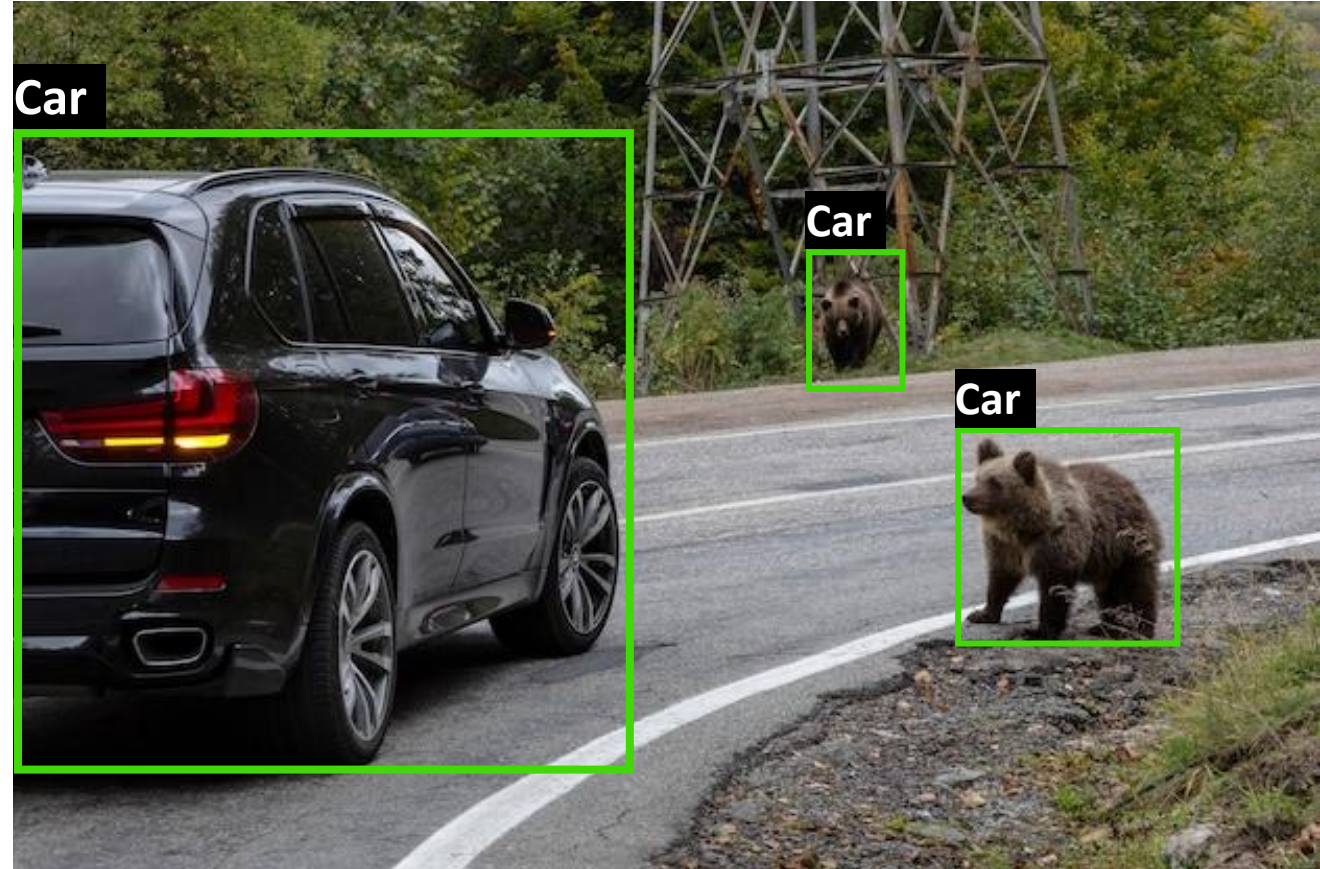
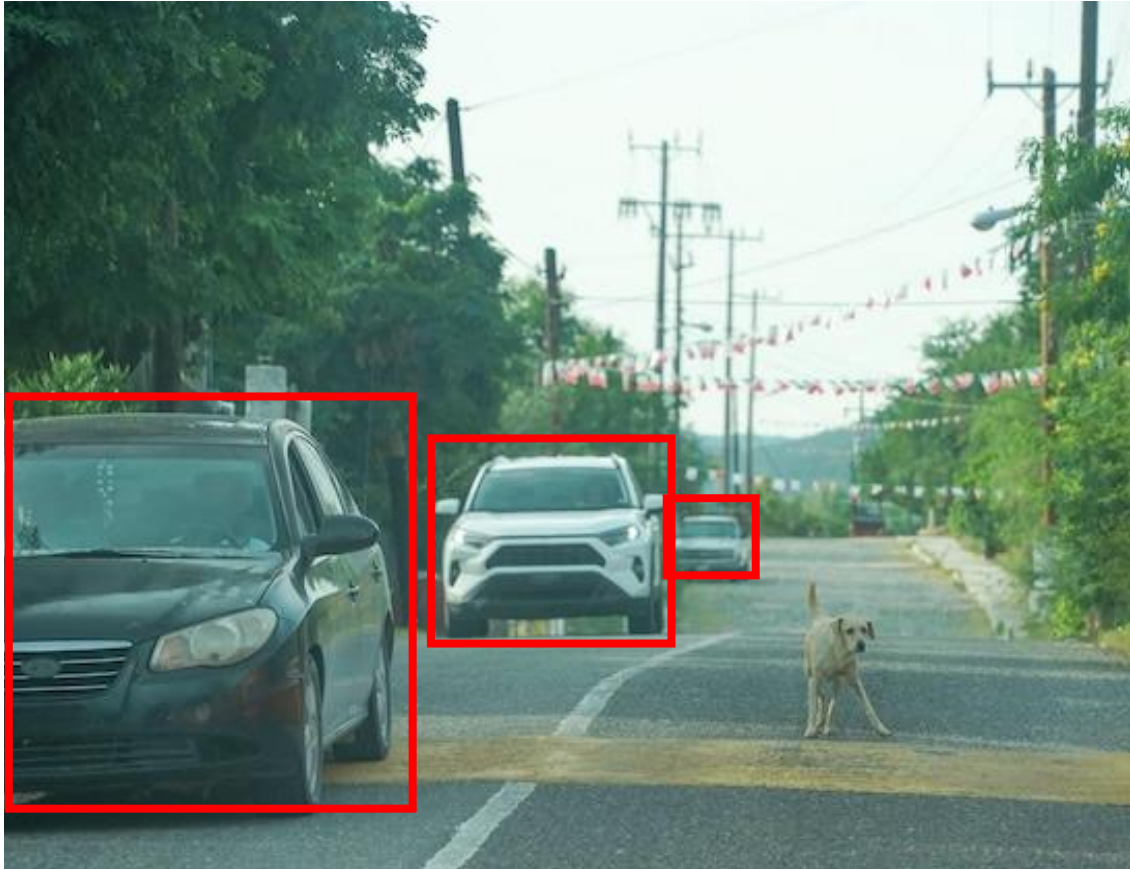
¹TU Dresden, ²University of Zagreb - FER, ³Carl Zeiss Meditec AG

CVPR 2023 Highlight

GEFÖRDERT VOM

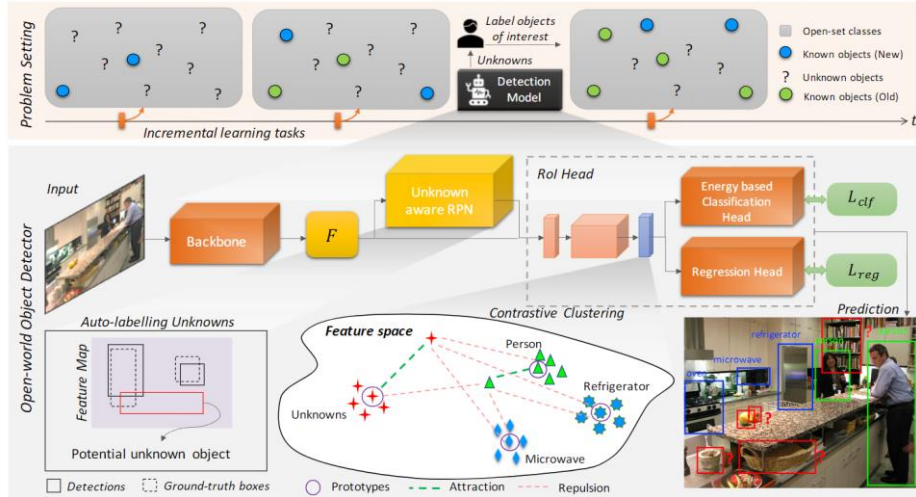


Vanilla Object Detection

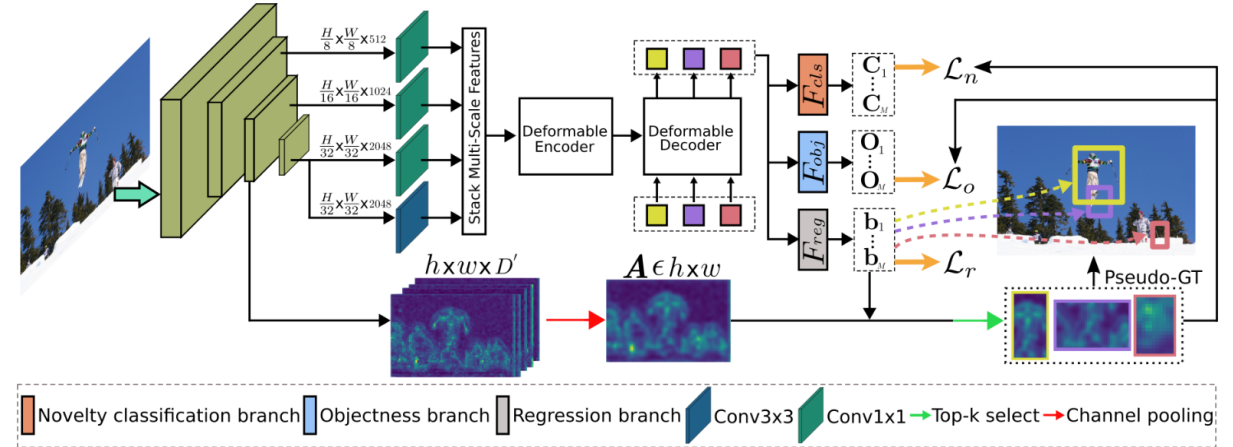


Related Work

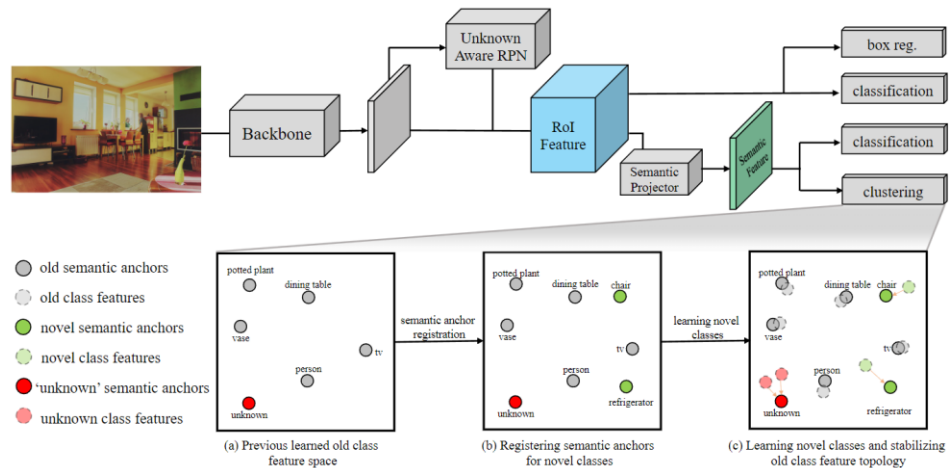
[1] *Towards open world object detection* [CVPR 2021]



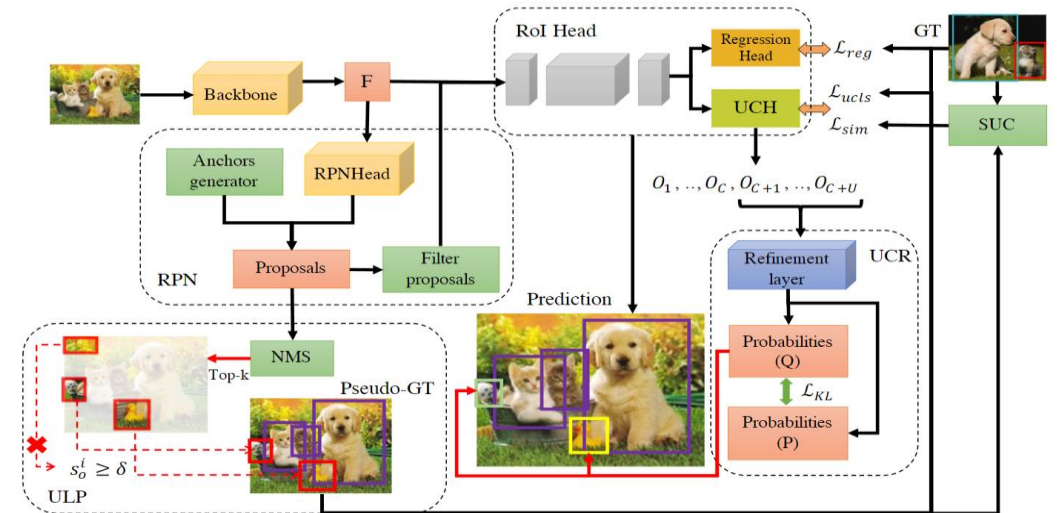
[2] *OW-DETR: Open-World Detection Transformer* [CVPR 2022]



[3] *Objects in Semantic Topology* [ICLR 2022]

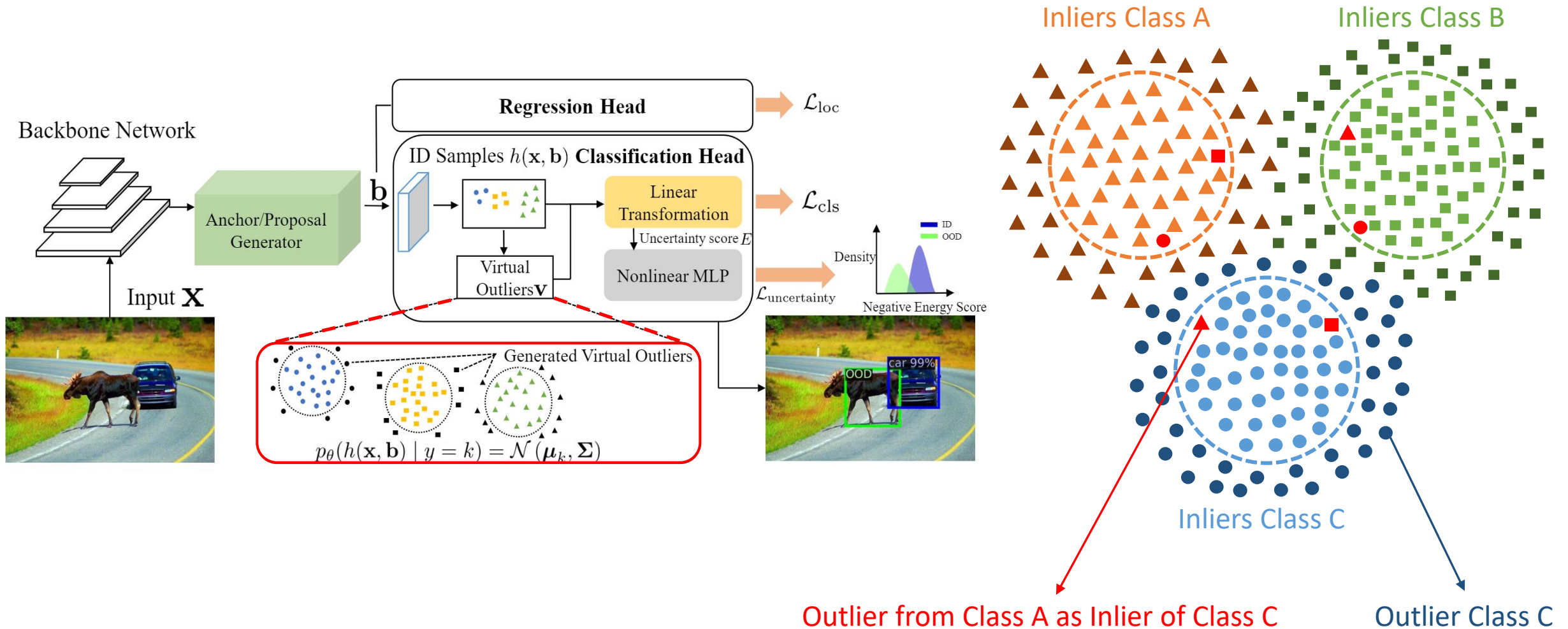


[4] *Unknown-Classified Open World Object Detection* [ECCV 2022]

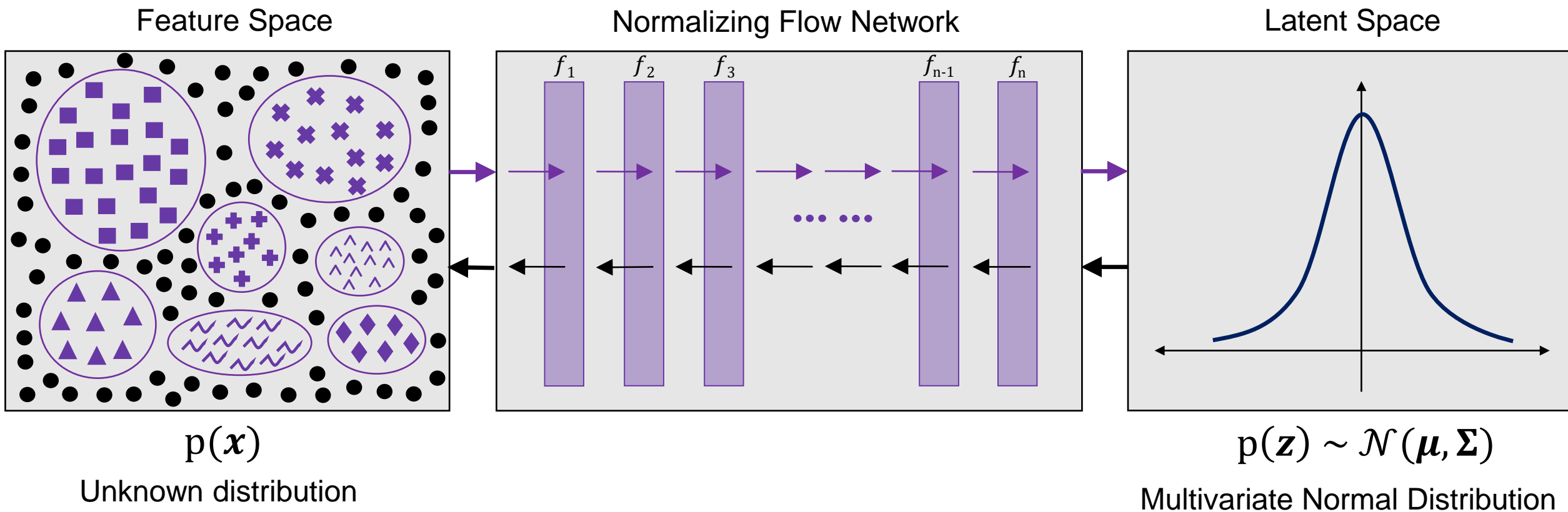


Related Work

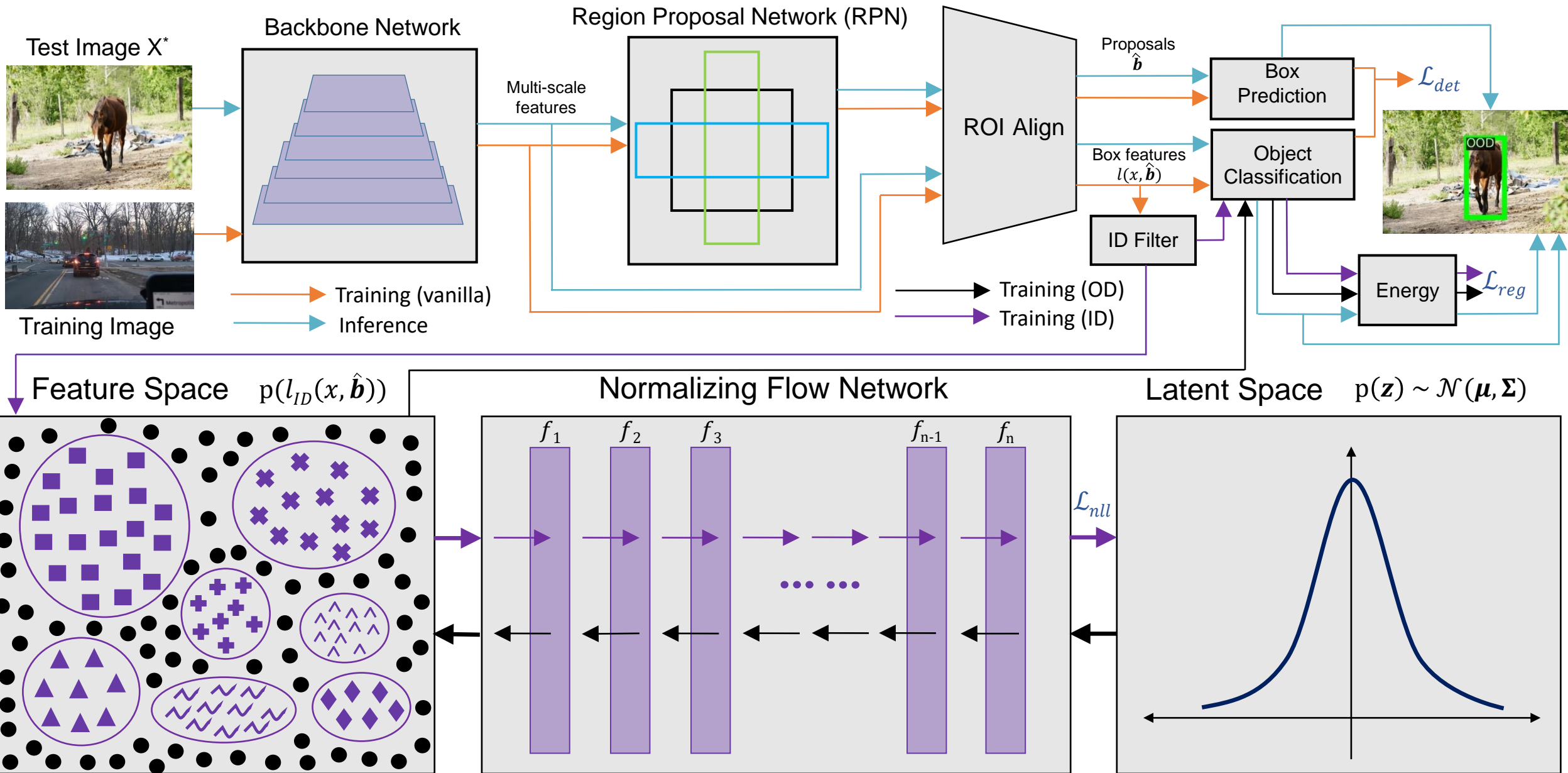
[5] VOS: Learning What You Don't Know by Virtual Outlier Synthesis [ICLR 2022]



Flow Feature Synthesis (Ours)

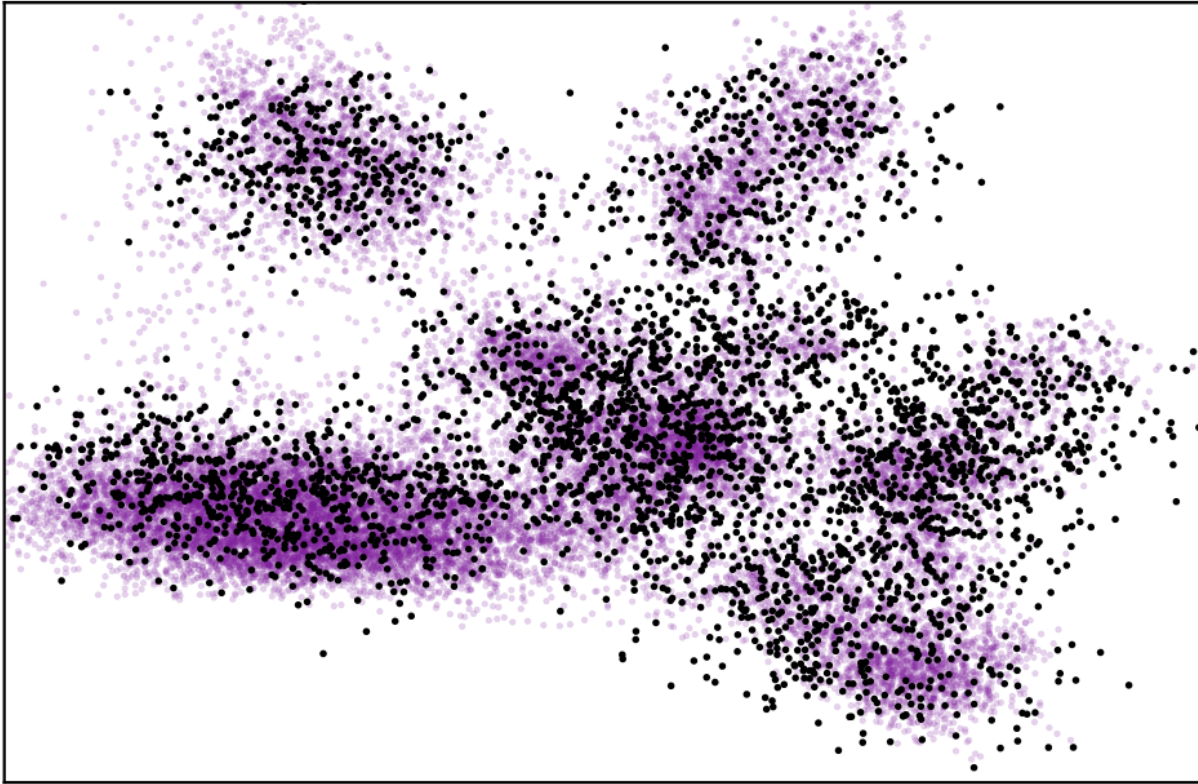


Flow Feature Synthesis (Ours)

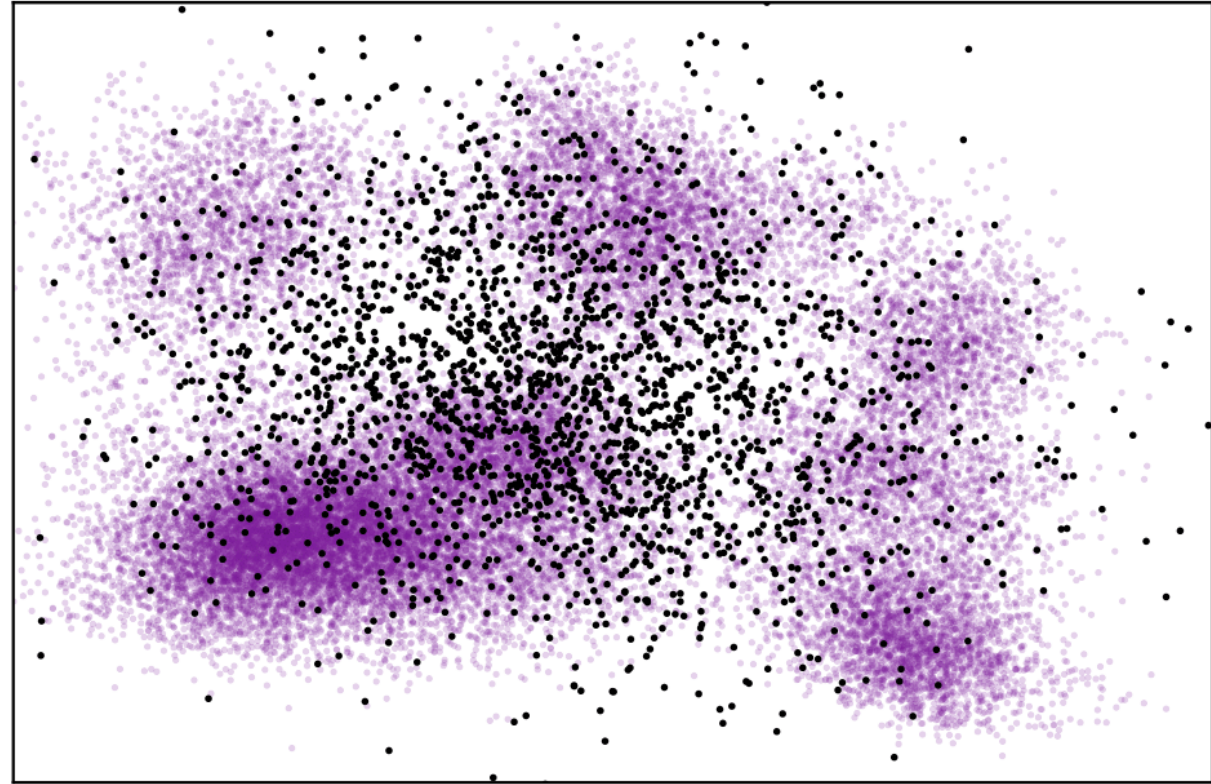


Flow Feature Synthesis (Ours)

VOS



FFS (ours)



Results

ID (Images)	OD	Method	FPR95 (↑)	AUROC (↓)	mAP (↑)
PASCAL-VOC	MS-COCO	VOS [1]	47.77	89.00	51.5
		FFS (Ours)	44.15	89.71	51.8
	OpenImages	VOS [1]	48.33	87.59	51.5
		FFS (Ours)	45.08	88.29	51.8

ID (Videos)	OD	Method	FPR95 (↑)	AUROC (↓)	mAP (↑)
BDD100K	nuImages	STUD [2]	79.75	76.55	32.3
		FFS (Ours)	76.68	77.53	36.2
Youtube-VIS	MS-COCO	STUD [2]	81.14	74.82	27.2
		FFS (Ours)	83.06	76.37	27.6

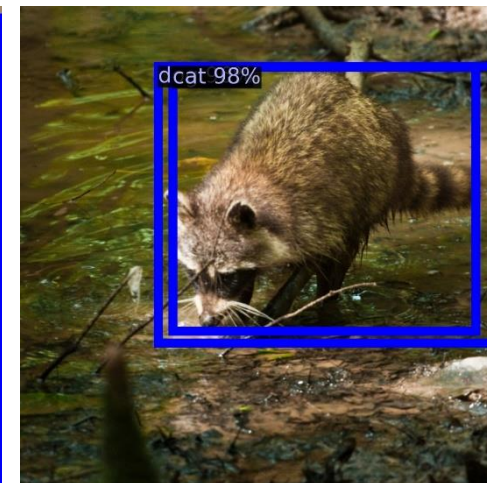
Sources:

[1] Du et. al. *VOS: Learning What You Don't Know by Virtual Outlier Synthesis* [ICLR 2022]

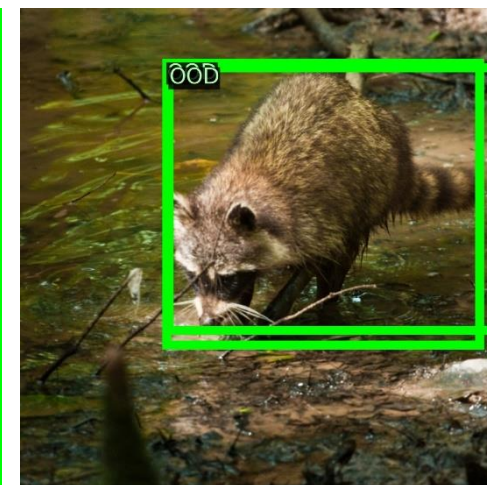
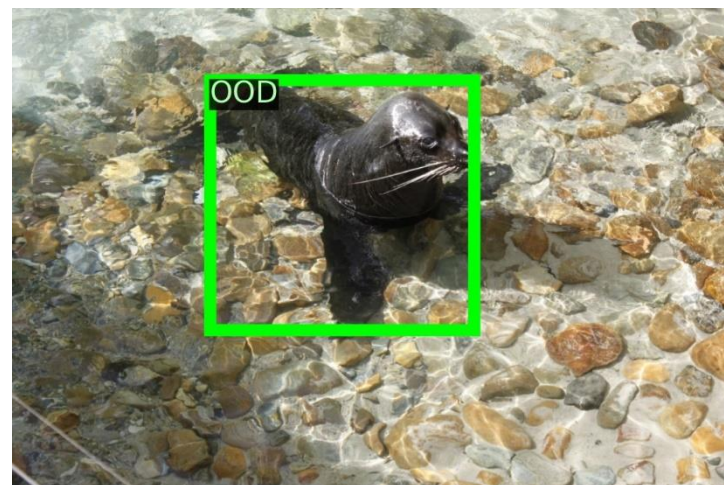
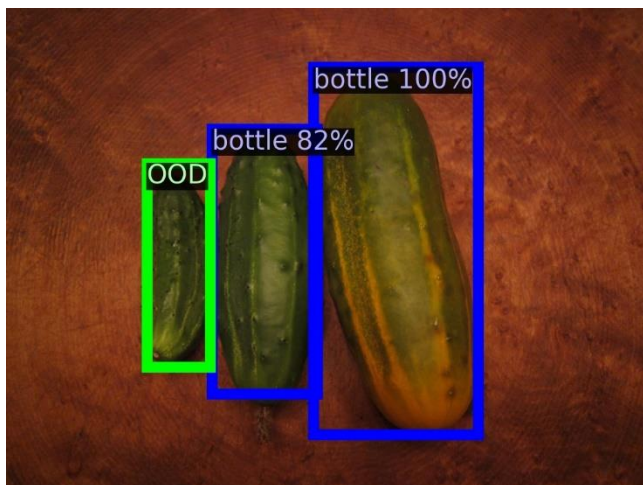
[2] Du et. al. *Unknown-Aware Object Detection: Learning What You Don't Know from Videos in the Wild* [CVPR 2022]

Results

VOS

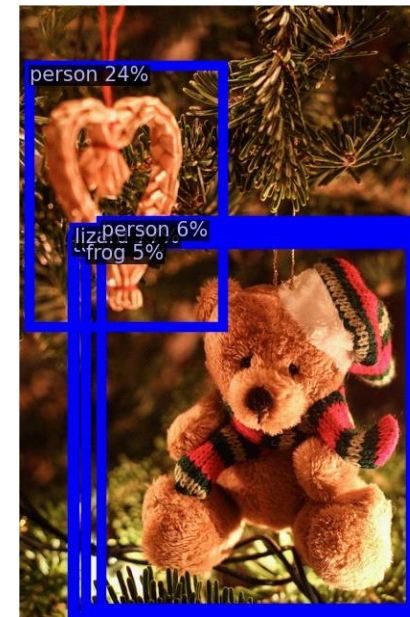
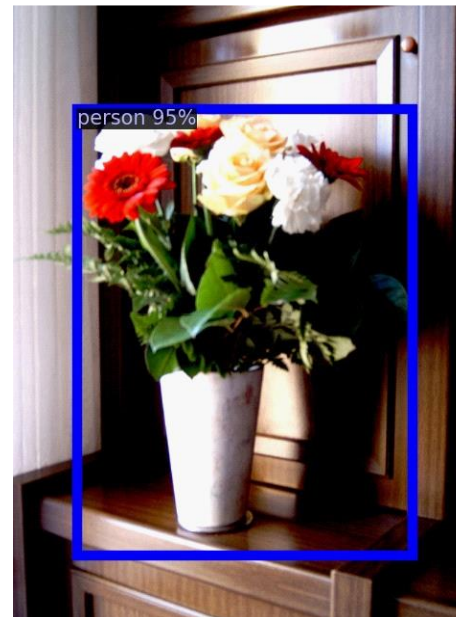
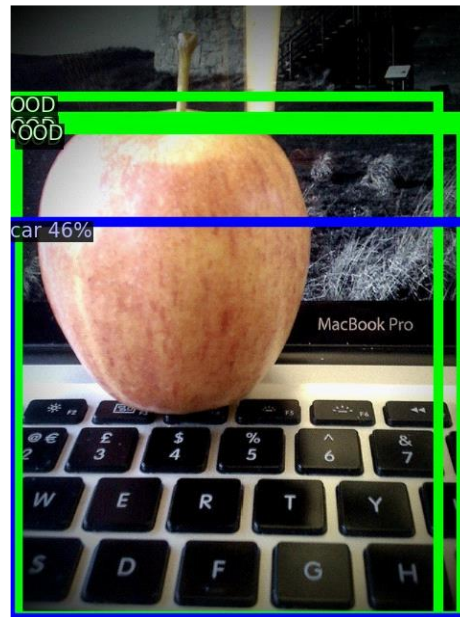


FFS

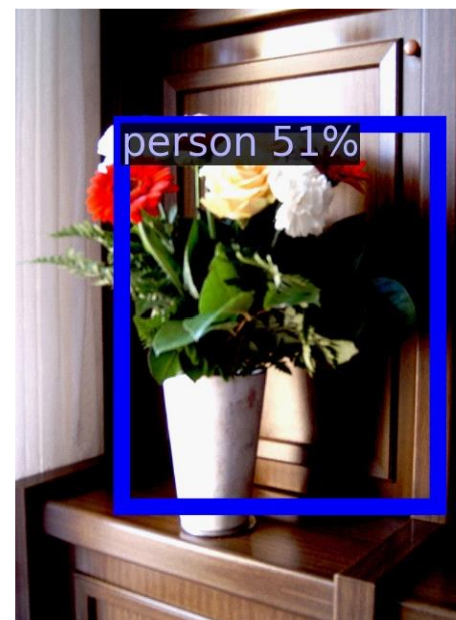


Results

STUD



FFS



Thanks for listening



**Computer Graphics
and Visualization**

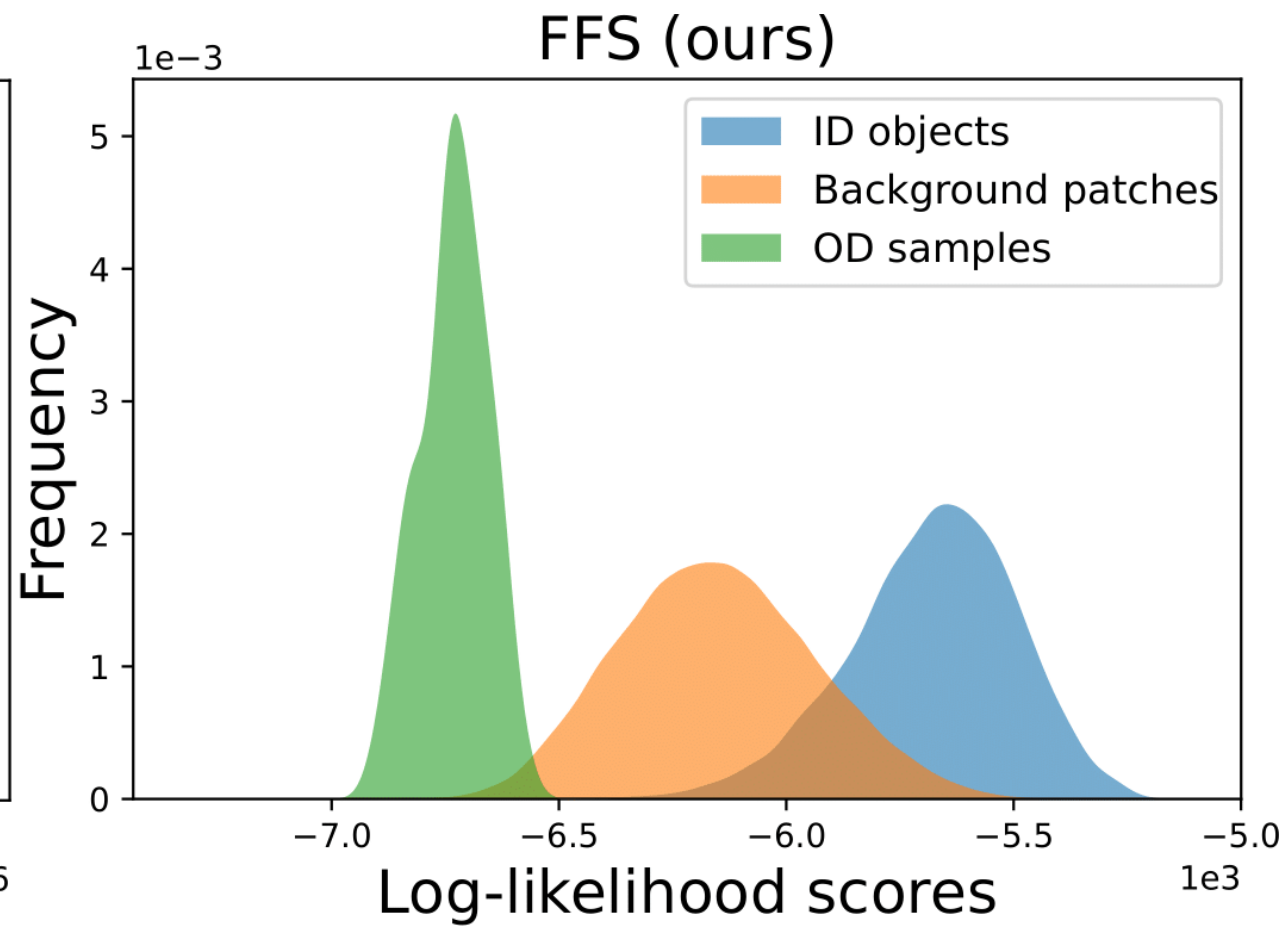
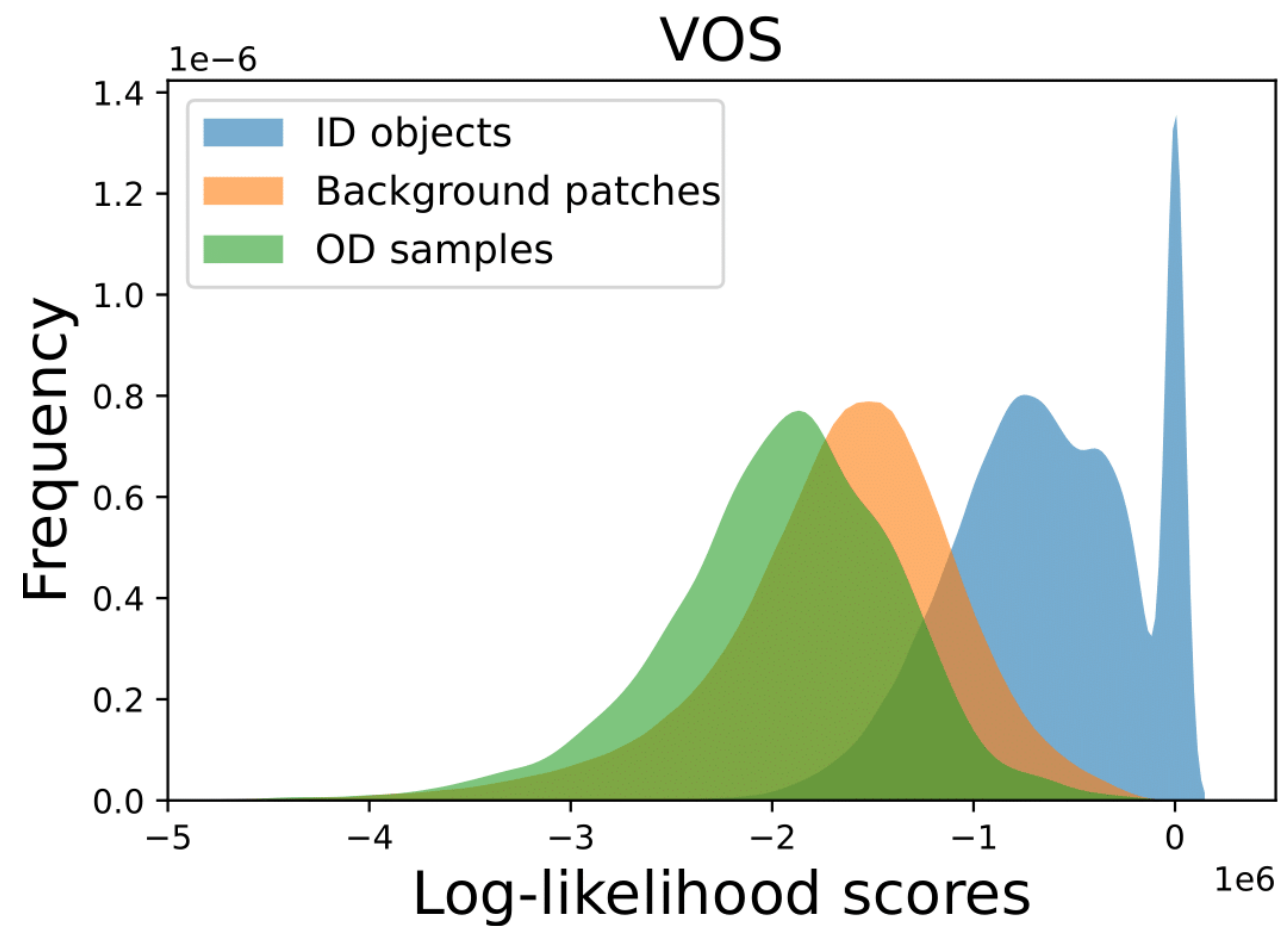


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**Bundesministerium
für Bildung
und Forschung**

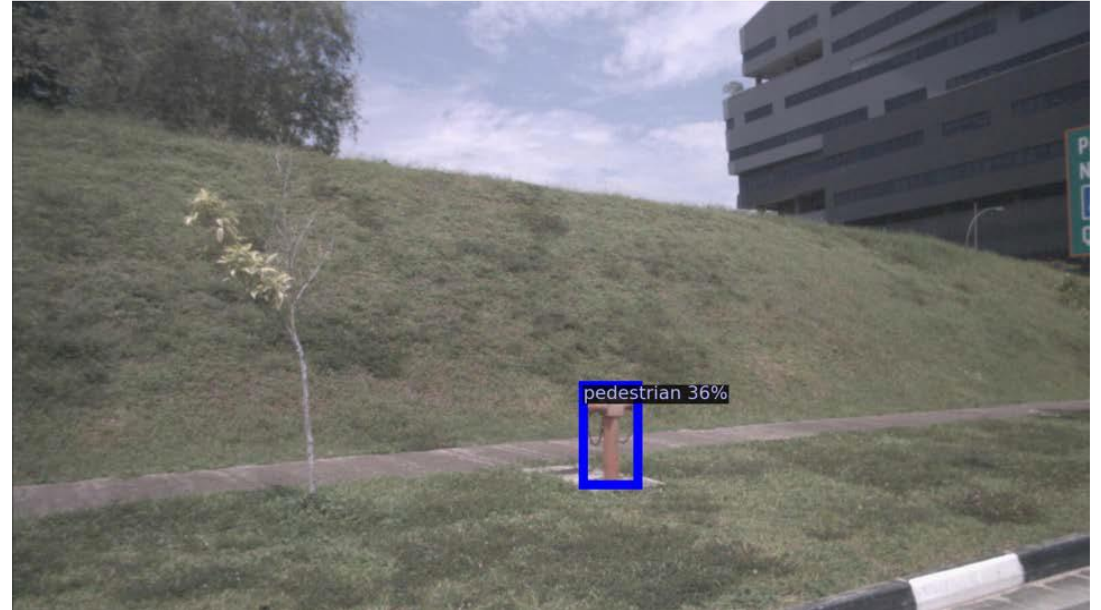


Appendix: Results



Appendix: Results

STUD



FFS

