



॥ त्वं ज्ञानमयो विज्ञानमयोऽसि ॥

Depth-Aware Domain Adaptation in Semantic Segmentation

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Problem:

Annotation to predict the semantic label of each pixel of the scene

Motivation:

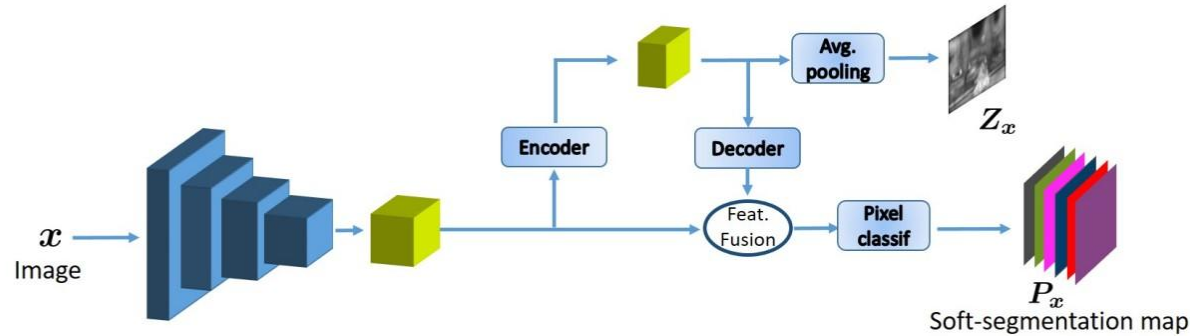
- Depth Estimation improves the semantic labeling
- Segmentation plays an important role in image processing since the separation of a large image into several parts makes further processing simpler. These several parts that are rejoined will cover the entire image. Segmentation may also depend on various features like color or texture that are contained in the image.



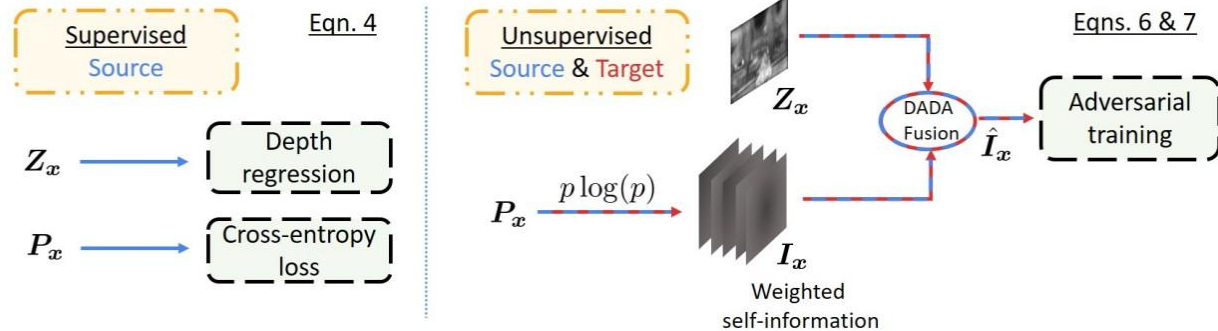
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Approach/ Block Diagram

DADA Architecture



DADA Learning scheme





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SYNTIA → Cityscapes (16 classes)

Models	Depth	road	sidewalk	building	wall*	fence*	pole*	light	sign	veg	sky	person	rider	car	bus	mbike	bike	mIoU	D-Gain	mIoU*
SPIGAN-no-PI [18]		69.5	29.4	68.7	4.4	0.3	32.4	5.8	15.0	81.0	78.7	52.2	13.1	72.8	23.6	7.9	18.7	35.8	-	41.2
SPIGAN [18]	✓	71.1	29.8	71.4	3.7	0.3	33.2	6.4	15.6	81.2	78.9	52.7	13.1	75.9	25.5	10.0	20.5	36.8	1.0	42.4
AdaptSegnet [35]		79.2	37.2	78.8	-	-	-	9.9	10.5	78.2	80.5	53.5	19.6	67.0	29.5	21.6	31.3	-	-	45.9
AdaptPatch [36]		82.2	39.4	79.4	-	-	-	6.5	10.8	77.8	82.0	54.9	21.1	67.7	30.7	17.8	32.2	-	-	46.3
CLAN [23]		81.3	37.0	80.1	-	-	-	16.1	13.7	78.2	81.5	53.4	21.2	73.0	32.9	22.6	30.7	-	-	47.8
AdvEnt [39]		87.0	44.1	79.7	9.6	0.6	24.3	4.8	7.2	80.1	83.6	56.4	23.7	72.7	32.6	12.8	33.7	40.8	-	47.6
DADA	✓	89.2	44.8	81.4	6.8	0.3	26.2	8.6	11.1	81.8	84.0	54.7	19.3	79.7	40.7	14.0	38.8	42.6	1.8	49.8

Results / Analysis

