

Strong-Weak Adversarial Domain Adaptation

Kate Saenko, Boston University

Unsupervised adaptation or fine-tuning of object models has the potential to significantly reduce annotation costs on novel datasets. A popular adaptation approach aligns distributions of source and target images using an adversarial loss. However, strongly matching the entire distributions of source and target images to each other at the global image level may fail, as domains could have distinct scene layouts and different combinations of objects. On the other hand, strong matching of local features such as texture and color may be more successful. I will discuss a novel approach for adversarial domain adaptation based on strong local alignment and weak global alignment. The key contribution is the weak alignment model, which focuses the adversarial alignment loss on images that are globally similar and puts less emphasis on aligning images that are globally dissimilar.