

Single-Source Deep Unsupervised Visual Domain Adaptation

SERI LEE*

Seoul National University
sally20921@snu.ac.kr

January 7, 2021

Abstract

I. INTRODUCTION

[1].

II. ADVERSARIAL DISCRIMINATIVE MODELS

Adversarial discriminative models usually employ an adversarial objective with respect to a domain discriminator to encourage domain confusion. In the early-stage of adversarial discriminative models, the domain adversarial training of neural networks is proposed to learn domain invariant and task discriminative representations. It is directly derived from the seminal theoretical works of Ben et al. and directly optimizes the \mathcal{H} -divergence between source and target. By deriving the generalization bound on the target risk and obtaining an empirical formulation of the objective, Ganin et al. proposed the Domain-Adversarial Neural Network (DANN) algorithm. From this point of view, the adversarial discriminative models are originally similar to the discrepancy-based models. Recently, a couple of adversarial discriminative models were proposed with different algorithms and network architectures, thus differing from the discrepancy-based methods.

REFERENCES

- [1] Sicheng Zhao, Xiangyu Yue, Shanghang Zhang, Bo Li, Han Zhao, Bichen Wu, Ravi Krishna, Joseph E Gonzalez, Alberto L Sangiovanni-Vincentelli, and Sanjit A Sethia. A review of single-source deep unsupervised visual domain adaptation. *IEEE Transactions on Neural Networks and Learning Systems* 2162-237X, 2020.

*A thank you or further information