

# Self-supervised Domain Adaptation for Computer Vision Tasks

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**Abstract**—Recent progress of self-supervised visual representation learning has achieved remarkable success on many challenging computer vision benchmarks. However, whether these techniques can be used for domain Adaptation has not been explored. In this work, we propose a generic method for self-supervised domain adaptation, using object recognition and semantic segmentation of urban scenes as use cases. Focusing on simple pretext/auxiliary tasks (e.g. image rotation prediction), we assess different learning strategies to improve domain adaptation effectiveness by self-supervision. Additionally, we propose two complementary strategies to further boost the domain adaptation accuracy on semantic segmentation within our method, consisting of prediction layer alignment and batch normalization calibration. The experimental results show adaptation levels comparable to most studied domain adaptation methods, thus, bringing self-supervision as a new alternative for reaching domain adaptation.

**Index Terms**—Domain Adaptation, semantic segmentation, object recognition

## I. INTRODUCTION

[1].

## REFERENCES

- [1] Jiaolong Xu, Liang Xiao, and Antonio M López. Self-supervised domain adaptation for computer vision tasks. *IEEE Access*, 7:156694–156706, 2019.