**ABSTRACT**

In this work we focus on the domain adaptation of deformable part-based models (DPMs) for object detection [1]. In particular, we focus on a relatively unexplored scenario, i.e. incremental domain adaptation for object detection assuming weak-labeling. Therefore, our algorithm is ready to improve existing source-oriented DPM-based detectors as soon as a little amount of labeled target-domain training data is available, and keeps improving as more of such data arrives in a continuous fashion. For achieving this, we follow a multiple instance learning (MIL) paradigm that operates in an incremental per-image basis. As proof of concept, we address the challenging scenario of adapting a DPM-based pedestrian detector trained with synthetic pedestrians [2, 3] to operate in real-world scenarios.

**REFERENCES**