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Weakly Supervised Object Localization and Segmentation in Videos

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Abstract

We consider the problem of localizing and segmenting objects in weakly labeled video. A video is weakly labeled if it is associated with a tag (e.g. YouTube videos with tags) describing the main object present in the video. It is weakly labeled because the tag only indicates the presence/absence of the object, but does not give the detailed spatial/temporal location of the object in the video. Given a weakly labeled video, our method can automatically localize the object in each frame and segment it from the background. Our method is fully automatic and does not require any user-input. In principle, it can be applied to a video of any object class. We evaluate our proposed method on a dataset with more than 100 video shots. Our experimental results show that our method outperforms other baseline approaches.

Keywords: weakly supervised, object localization

1. Introduction

Due to the popularity of online video sharing websites (e.g. YouTube), an ever-increasing amount of video content is becoming available nowadays. These online videos prove to be both a valuable resource and a grand challenge for computer vision. Internet videos are often weakly labeled. For example, many

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