

ABSTRACT

Object tracking is a technology in computer vision that is experiencing rapid development. It has been largely implemented in terms of security, medical imaging, automation, and robotic. But, object tracking itself still has some issues such as not being able to track object that has high scale variations. In Weighted Multiple Instance Learning (WMIL), there is not algorithm to estimate the scale of the object, so the problem still remains in terms of performance.

In this proposal we already made an algorithm to estimate the scale of the object for WMIL. To estimate the object location, WMIL is used. To estimate the location of target, using WMIL by calculating the classifier as the features. But, size of the bounding box is fixed. That is why we use Speeded-Up Robust Feature(SURF) to extract the features because SURF itself is scale-invariant. So, then the estimated bounding box will be changed over the scale. We named our method as Enhanced Weighted Multiple Instance Learning (EWMIL) where the performance of this algorithm was already tested using One-Pass Evaluation (OPE) based on precision plot to determine center location error and success plot which is calculated based on the overlap score.

Based on the test using OTB-50 Datasets, our method has increased by 0,266 on success plot and increased by 0,288 on precision plot compared to WMIL. From 11 attributes, our method has increased in 7 attributes and decreased in 4 attributes.

Keywords: *Multiple Instance Learning, Boosting Classifier, Scale Estimation, Object Tracking, OPE*