# ABSTRACT

*Object tracking is one of the sub-materials of computer vision and has developed very rapidly. Object tracking is widely used in various applications, such as in security, medical imaging, and human-computer interaction. But in its development there are still many challenges in object tracking that affect the performance of the tracker. In Weighted Multiple Instance Learning (WMIL), illummination and occlusion are the main factors causing the failure of tracking (drift) and also on WMIL tracking failure can not be detected.*

*Weighted Multiple Instance Learning (WMIL) is a method of object tracking that predicts the location of an object based on a sample that has the highest probability. But in WMIL, if there is a failure or drift when tracking, the tracker will keep track of the object with the wrong prediction. Therefore, we propose an object tracking system that combines the WMIL method with the Type-2 Fuzzy Logic System (T2FLS). Where T2FLS is used to determine whether the system has failed or not when tracking objects based on predefined rules in Type-2 Fuzzy Logic. The output of WMIL will be the input of Type-2 Fuzzy Logic.*

*The performance of the algorithm is tested using a Benchmark 50 Object Tracking (OTB-50) based on the parameters of the Precision Plot and Success Plot. From the results of experiments that have been conducted, the algorithm that we propose produces a performance of 0.022 more precise than WMIL based on precision plot parameters and has a success rate greater than 0.023 measured based on success plot parameters.*

***Keywords***: *Weighted Multiple Instance Learning*, *Object Tracking*, *Type-2 Fuzzy Logic System*, *OTB-50*, *Boosting Classifier*