ABSTRACT

Object tracking is one area in computer vision that learns about how to track an object that moves in a space, which is now growing rapidly. Object tracking in application is used in tracking both object movements and humans and augmented reality. But in application object tracking still has many challenges in detecting an object. In the kernel-based object tracking, color similarity (background clutters) and fast motion of objects (motion blur) are the main factors causing tracking failure and also on the kernel-based object tracking that have not been able to detect failures in training. So that the failure correction algorithm is applied to kernel-based using type-2 fuzzy logic.

Kernel-based object tracking is a method of tracking objects that predicts the location of an object based on a color histogram that has the highest probability. In its application the kernel-based method is less accurate in detecting objects because the similarity of background colors with objects that are tracked and tracker will still track incorrect predictions so that Type-2 fuzzy logic is used to analyze the occurrence of failure according to predetermined rules and do correction when object tracking. Where the output of the kernel-based method is an input of type-2 fuzzy logic.

The results of this system algorithm can improve the performance of the kernel-based method of the algorithm tested using a Benchmark 50 Tracking Object (OTB-50) based on the parameters of the Precision Plot and Success Plot. The results of experiments that have been carried out, the proposed algorithm produces a formula of 0.001 more precision than the kernel-based object tracking which produces a score of 0.386 while the proposed system produces a score of 0.387 based on the precision plot parameters and has a success rate greater than 0.003 compared to kernel-based object tracking which produces a score of 0.260 while the diproposed system produces a score of 0.263 measured based on the parameter success plot.

Keywords: *Object Tracking, Kernel-based, Type 2 Fuzzy Logic, Computer Vision*