**Moving Object Tracking Distance and Velocity Determination based on Background Subtraction Algorithm**

**ABSTRACT**

Currently, both the market and the academic communities have required applications based on image and video processing with several real-time constraints. On the other hand, detection of moving objects is a very important task in mobile robotics and surveillance applications. The project is proposes an efficient motion detection and object velocity determination based on background subtraction using dynamic threshold and morphological process. These methods are used effectively for object detection and most of previous methods depend on the assumption that the background is static over short time periods. In dynamic threshold based object detection, morphological process and filtering also used effectively for unwanted pixel removal from the background. Then object is detected in a sequence of frames with respect to the frame rate that the video is recorded. A simulation result proves that the proposed method is effective for background subtraction for object detection compared to several competitive methods proposed in the literature and determination. The method is able to identify moving persons, track them and provide unique tag for the tracked persons. The background subtraction algorithm can also be used to detect multiple objects. The algorithms developed can also be used for other applications (real time, object classification, etc.).

***Keywords:*** Object tracking, Frame separation, Background Subtraction Algorithm, Object detection.