

E.ENG.24

CAMERA BASED OBJECT TRACKING SYSTEM

J. S. U. Jayalath, R. A. T. S. Shanaka, M. G. Y. Lakshitha, M. B. Dissanayake

*Department of Electrical and Electronic Engineering,
Faculty of Engineering, University of Peradeniya*

Object tracking in a real time video stream is useful for a wide variety of surveillance applications. Tracking of moving objects or intruders in a video stream is required by many applications. This system proposes two methods to track the objects. The first is called the two frame difference method and the second, the background cancellation method. In the two frame difference method, the usual practice is to obtain the difference of two consecutive frames of a video. Then it detects the segments that have moved or changed in the new frame with respect to the old frame. The second method uses a static or dynamic background image as the reference. Static background can be the first image produced by the camera or it can be selected by the user. Dynamic background can be generated by taking the average of previous frames. Then it is subtracted from every new frame, and thereby it detects the intruders in newly coming frames. In order to achieve a high quality output, this system uses blob filling and blob filtering methods to reduce noise. To facilitate the identification of different blobs, connected components counting methods are used. The video and image capturing options add more value to this system. Furthermore, the proposed system can be used for a wide range of applications such as traffic controlling, and city planning, etc.