

ABSTRACT

Nowadays, biometric authentication researches are becoming one of the major focuses among researchers due to various fraud attempts are taking place. Although, several authentication operations are available, these are not free of defects that affect negatively on the authentication operation. Therefore, a novel technique is proposed using index-finger of a hand in order to point out random directions such as up, down, left, or right. Accordingly, a new feature extraction based on area of the index-finger is proposed. It is hybrid between static and dynamic hand directional gesture recognition having advantage that is not forgettable as password due to biologically that this gesture is stored in the brain as visual memory type. This method starts by recording a video around 2-10 seconds as time duration, and then frames are processed one by one to output 4-set-direction, which are deemed as passwords for an individual. Later on, extracted gesture direction vector is matched against the stored one, to output either “accept” or “reject” status. Experiments were conducted on 60-video frames were prepared for training and testing recorded from 10 individuals. Result findings demonstrate high successful recognition rate as the performance accuracy is 98.4% of this proposed method.