LITERATURE REVIEW

The research topic [2] of its kind, based on perocular biometrics has exploration and analysis of biometrics recognition using perocular images especially when compared to iris recognition. Authors presented a feasibility study of perocular biometric recognition, when using local descriptors, LBP (Local Binary Pattern), HOG (Histogram of Oriented Gradients) and global descriptor SIFT (Shift Invariant Feature Transform) features. The performance result with these descriptors with and without eye brow was also reported by authors.

Another interesting work [13], which is an extension of the research paper, has extensively presented results with various aspects of perocular recognition that include role of eyebrows, left or right eye information contribution, manual or automatic segmentation impacts, local and global feature’s effectiveness, performance achieved by perocular biometrics. The experiments carried in this topic used FRGC 2.0 database [3]. In recent research [4], gender and ethnicity were identified using perocular images. Another researcher [5] studied the effect of using fusion techniques on perocular and iris images for non-ideal images of the eye characterized by occluded irises, motion and spatial blur, poor contrast and illumination artifacts. The experimental results using MBGC database [6] shows that score level fusion can improve the recognition performance.

In this work, we will develop novel computational intelligence based technique for perocular biometric based human recognition. In most of the researcher, it has been found that statistic based applications are employed for perocular based human recognition. Therefore, we will design and develop, synergistic, integration of neural fuzzy system for efficient perocular based biometric system. Moreover, we will use different feature extraction techniques such as LBP, PCA, and ICA for pre-processing of perocular biometrics. Comparative Analysis with other competent technologies is also the essential part of this research work and also investigates the effect of inclusion/exclusion of eyebrows in perocular biometrics. We will use standard database such as UBIRIS v2 database [9].