**Biometric Authentication by Dorsal Hand Vein Pattern**

**Abstract**

Vein pattern is the network of blood vessels beneath a person’s skin. This vein pattern can be used to authenticate the identity of an individual. In this paper, a new approach is proposed to extract features from the dorsal hand vein pattern. The length of the main vein and the angle at the bifurcation points were used as the key features for this system. We mainly used the concepts of hough transform and K-nearest neighbor matching algorithm. The proposed methodology has been tested on a self generated dataset of 20 persons dorsal hand vein images and the achieved experimental results are found to be promising, with an accuracy of 90%.

**Keywords:** Hand vein, Hough Transform, Knn matching