Abstract

Iris segmentation is almost the most challenging part in iris recognition. Several robust algorithms in the recognition part have been developed in literature yet. In this paper, we focus on an efficient approach for iris segmentation. The main purposes are to improve accuracy and to reduce computational time of iris localization. Briefly, this approach tries to explore regions of
interests (ROI) among image regions and to localize iris from one or more remaining regions. ROI are the regions in which, the iris is most likely exit. An empirical binarization method for iris images is presented. Its aim is to preserve the iris region while removes background. A novel candidate selection is presented for extracting iris region among other image regions. For localizing the iris boundaries from the identified region, the Daugman’ Integro operator is being used. It is obvious that iris localization from one or fewer number of regions is more accurate and faster than the whole detailed image. Moreover, a novel and very fast clustering algorithm is proposed. It is used to detect and remove some extra or rough details of image. The proposed approach is being tested on CASIA-IrisV2 dataset. The experiments show that the proposed approach yielded reliable regions of interest and provided accurate segmentation.

Reference

- P. Li, H. Ma, Iris recognition in non-ideal imaging conditions, Pattern Recognition Letters,
2011.
- CASIA-IrisV2, http://biometrics.idealtest.org/

Index Terms

Computer Science

Security

Key words

Iris recognition

iris localization

clustering

k-means

Integro operator

iris

optimization