Abstract

Face recognition is an important and challenging field in computer vision. This research presents a system that is able to recognize a person's face by comparing facial structure to that of a known person which is achieved by using frontal view facing photographs of individuals to render a two-dimensional representation of a human head. Various symmetrization techniques are used for preprocessing the image in order to handle bad illumination and face alignment problem. We used Eigenface approach for face recognition. Eigenfaces are eigenvectors of covariance matrix, representing given image space. Any new face image can then be represented as a linear combination of these Eigenfaces. This makes it easier to match any two given images and thus face recognition process. The implemented eigenface-based technique classified the faces 95% correctly.

References

- F. Galton, "Personal identification and description 1,1 Nature, pp. 173-177, 21
June 1988
- Sir Francis Galton, Personal identification and description-II"; Nature 201-203, 28 June 1988

Index Terms

Computer Science
Pattern Recognition
Keywords

Principle component analysis  eigenvector  eigenvalue  eigenface  faces  recognition