Abstract

Face recognition is very much popular in the present era, and many researchers are working on face recognition and produce the most promising results in terms of recognition and human identification. It has many applications for authentication and verification. Along with these advancements, face recognition is still challenging the heterogamous environment, such as near-infrared and visible spectrum. Matching of face images capture in the near-infrared spectrum (NIR) to face images of the visible spectrum (VIS) is a very challenging task.

In this research work, we have proposed a deep learning-based model for cross-spectral face matching (face recognition). The 26-layered deep residual network is extracted discriminative features from the face images and learn the common feature of the subject in the cross-spectral for the matching. To trained the proposed model, we have applied both VIS and NIR images with corresponding labels. For the performance evaluation of the proposed cross-spectral matching algorithm, experiments are performed on publicly available CASIA 2.0 NIR-VIS face datasets. The proposed method produced significant improvement in GAR. Our method gives
recognition accuracy of 98.55%.

References

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Index Terms

Computer Science

Image Processing

Keywords

Biometric system, Face Recognition, Near-infrared spectrum image, Visible spectrum image, Deep learning, Residual Network.