Abstract

Huge amount of video data is being generated every day, with enormous growth of security and surveillance system. It is immensely challengeable for researcher to search and retrieve accurate human face of interest from video with utmost speed. The proposed work is stimulated from the same concern. It would be the future demand for searching, browsing, and retrieving human face of interest from video database for several applications. This paper proposes the novel algorithm for human face retrieval from video database based on holistic approach. The Viola and Jones frontal face detector detect the face region. The next stage is face extraction which have input for grouping individual faces. The individual group of faces has converted into single normalized mean face using PCA. The final face group contains single face for each person occurred in video. After the pre-processing of normalized faces, recognition is performed on the basis of query face image.
A Novel Algorithm for Automatic Human Face Retrieval in Video

References

- Ming-Hsuan Yang, David J. Kriegman and Narendra Ahuja, Detecting Faces in Images: A Survey, IEEE TRANSACTIONS ON PATTERN ANALYSIS AND MACHINE INTELLIGENCE, VOL. 24, NO. 1, pp-36-58, JANUARY 2002
- Josef Sivic et al., Finding people in repeated shots of the same scene, proceeding of the British Machine Vision Conference, 2006
- Yi-Fan Zhang, Changsheng Xu et al, Character Identification in feature length films using global face – name matching, IEEE transaction on multimedia, Vol. 11 No. 7, Nov 2009
- Yina Han et al., Speaker retrieval for TV show video by associating audio speaker recognition result to visual faces, Proceedings of 2nd International conference the K-Space, 2008
- Ognjen Arandjelovic et al, Automatic face recognition for film character retrieval in feature-length films, In proceeding of IEEE Conference on Computer Vision and Pattern Recognition, San Diego, 2005
- Shuji Zhao et al, Actor retrieval system based on kernels on bags of bags, 16th European signal processing conference, (EURASIP), Switzerland, Aug 25-29, 2008
- Daidi Zhong and Irek Defee, Face retrieval based on robust local features and statistical structure learning approach, EURASIP Journal on Advances in Signal Processing, Volume 2008, Article ID 631297, 12 pages
- Aamer S. S. Mohamed et al, An efficient face image retrieval through DCT features, In proc. of international conference, 2006
- Chon Fong Wong et al., Face image retrieval in video sequence using lifting wavelets transform feature extraction, Proceedings of the Ninth IEEE International Symposium, 2005
- Mark Everingham et al., Identifying individuals in video by combining generative and discriminative head models, Proceedings of the International Conference on Computer Vision, 2005
- Ran He, Wei-Shi Zheng and Bao-Gang Hu, Maximum Correntropy Criterion for Robust Face Recognition, IEEE TRANSACTIONS ON PATTERN ANALYSIS AND MACHINE INTELLIGENCE, VOL. 33, NO. 8, PP. 1561-1576, AUGUST 2011
- Stefano Berretti, Alberto Del Bimbo, and Pietro Pala, 3D Face Recognition Using Isogeodesic Stripes, IEEE TRANSACTIONS ON PATTERN ANALYSIS AND MACHINE INTELLIGENCE, VOL. 32, NO. 12, PP. 2162-2177, DECEMBER 2010

Index Terms

Computer Science
Emerging Trends in Technology

Keywords

Face Detection  Face Recognition  Tracking