Abstract

Face recognition is one of the most significant achievements in human vision. It has emerged that eigenface, neural network, graph matching, hidden markov model, geometrical feature matching, template matching, 3D morphable model, line edge map (LEM), support vector machine (SVM), multiple classifier systems (MCSs) are fashionable techniques of face recognition. Till date, all existing techniques could not provide satisfactory results. In this view, paper is presented a new system OFRS (Optimal Face Recognition System). This system can be find optimal accuracy of face recognition. The system is based on PCA-SVM (Principle component analysis-Support Vector Machine) combinations. It is used preprocessing, feature extraction, classification, optimization, techniques in the best way. Since, "PCA-SVM combination" suffers from the limitation of scalability. Hence, IPCA (Incremental PCA) is proposed to be used, for the first time with this combination, as feature selection strategy to overcome scalability problem. GA (Genetic Algorithm) is proposed to be used, for the first time, as optimization of SVM kernel for face recognition. At last, paper describes impact of proposed system in academic as well as industry.
References

- Surya Prakash, Devdatt and Phalgungi Gupta U. Jayaraman, &quot;An Indexing Technique for Biometric Database&quot;, IEEE, 2008, pp: 758-761
- Rakesh Kumar Yadav, Abhishek K Mishra, Naveen Prakash, Himnashu Sharma, &quot;Principle component analysis from multiple data representation&quot;, International journal of computer and network security, 2010, Volume 2, Number 5, pp: 8-10
- N. Gistiane and J Taylor, &quot;An introduction to support Vector machine and other Kernel based Learning Methods&quot;, Cambridge university, Press, 2000
- Kebin Cui; Feng Han; Ping Wang, &quot;Research on Face Recognition Based on Boolean Kernel SVM&quot;, Fourth International Conference on Natural Computation, IEEE, 2008 Volume: 2, pp: 148 - 152
- Jianke Li; Baojun Zhao; Hui Zhang; Jichao Jiao, &quot;Face Recognition System Using SVM Classifier and Feature Extraction by PCA and LDA Combination&quot;, in proceeding of IEEE conferences on International Conference on, 2009, pp: 1 – 4
- Zhao Lihong; Song Ying; Zhu Yushi; Zhang Cheng; Zheng Yi, &quot;Face recognition based on multi-class SVM&quot;, in proceeding of IEEE conferences on International Conference on Control and Decision Conference, 2009, pp: 5871 - 5873
- Len Bui; Dat Tran; Xu Huang; Chetty, G, &quot;Face Gender Recognition Based on 2D Principal Component Analysis and Support Vector Machine&quot;, 4th International Conference
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- Chengliang Wang; Libin Lan; Yuwei Zhang; Minjie Gu; "Face Recognition Based on Principle Component Analysis and Support Vector Machine"; 3rd International Workshop on Intelligent Systems and Applications (ISA), IEEE, 2011, pp:1-4
- Haitao Zhao, Pong Chi Yuen, James T Kwork and Jingyu Yang, "Incremental PCA Based Face recognition"; IEEE, 2004, Volume 1, pp: 687-691.

Index Terms

Computer Science          Pattern Recognition

Keywords

Pca Svm Mcs Ofrs Face Recognition