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Abstract

This paper presents study of face recognition system which is based on Principal Component Analysis (PCA) and Linear Discriminant Analysis (LDA) [1], [2]. These methods are used for feature extraction and dimension reduction. Nearest Neighbour Classifier (NNC) is used for classification. For matching Mahalanobis Cosine (Mahacos) and Cosine (Cos) distance is used.

**Refer
ences**

- Struc V. , Paveic, N. ,"The Complete Gabor-Fisher Classifier for Robust Face Recognition"; EURASIP Advances in Signal Processing, vol. 2010, 26 pages, doi:10.1155/2010/847680, 2010.
- Struc V. , Paveic, N. ,"Gabor-Based Kernel Partial-Least- Squares Discrimination Features for Face Recognition"; Informatica (Vilnius), vol. 20, no. 1, pp. 115-138, 2009.
- R. Chellappa, C. L. Wilson, and S. Sirohey,"Human and Machine Recognition of Faces: A Survey"; Proc. of the IEEE, vol. 83, no. 5, pp. 705-740, May 1995.
- Robert J. Baron,"Mechanisms of Human Facial Recognition"; International Journal of Man-Machine Studies, vol. 15, no. 2, pp. 137-178, 1981.
- R. Brunelli and T. Poggio,"Face Recognition: Features versus Templates"; IEEE Tran. on Pattern Analysis and Machine Intelligence, vol. 15, no. 10, pp. 1042-1052, October 1993.
- E. Osuna, R. Freund, and F. Girosi,"Training Support Vector Machines: An Application to Face Detection"; In IEEE Conference on Computer Vision and Pattern Recognition, pp. 193-199, 1997.
- Vladimir N. Vapnik,"The Nature of Statistical Learning Theory"; Springer Verlog, Heidelberg, DE, 1995.
- L. Sirovich and M. Kirby,"Low-dimensional Procedure for the Characterization of Human Faces"; Journal of Optical Society of America, vol. 4, no. 3, pp. 519-524, March 1987.
- Matthew Turk and Alex Paul Pentland,"Eigenfaces for Recognition"; Journal of Cognitive Neuroscience, vol. 3, no. 1, pp. 71-86, 1991.
- Peter N. Belhumeur, Joao P. Hespanha, and David J. Kriegman," Eigenfaces vs. Fisherfaces: Recognition Using Class Specific Linear Projection"; IEEE Tran. on Pattern Analysis and Machine Intelligence, vol. 19, no. 7, pp. 711-720, July 1997.
- Bernhard Scholkopf, Alex J. Smola, and Andre Bernhardt,"Non-linear Component Analysis as a Kernel Eigenvalue Problem"; Neural Computation, vol. 10, no. 5, pp. 1299-1319, 1998.
- M. H. Yang,"Kernel Eigenfaces vs. Kernel Fisherfaces: Face Recognition using Kernel Methods"; In IEEE International Conference on Face and Gesture Recognition, pp. 215-220, Washington, May 2002.
- A. Jonathan Howell and Hilary Buxton,"Invariance in Radial Basis Function Neural Networks in Human Face Classification"; Neural Processing Letters, vol. 2, no. 3, pp. 26-30, 1995.
- Steve Lawrence, C. Lee Giles, Ah Chung Tsoi, and Andrew D. Back,"Face Recognition: A Convectional Neural Network Approach"; IEEE Trans. on Neural Networks, vol. 8, no. 1, pp. 98-113, 1998.
- T. Poggio and K. K. Sung,"Example-based Learning for View-based Human Face Detection"; ARPA Image Understanding Workshop, November 1994.
- M. J. Er, S. Wu, and J. Lu,"Face Recognition using Radial Basis Function (RBF) Neural Networks"; In 38th Conference on Decision & Control, Phoenix, Arizona USA, pp. 2162-2167, 1999.
- C. E. Thomaz, R. Q. Feitosa, and A. Veiga,"Design of Radial Basis Function Network as Classifier in face Recognition using Eigenfaces"; In V th Brazilian Symposium

on Neural Networks, pp. 118-123, 1998.

- Y. Yoshitomi, T. Miyaura, S. Tomoto, and S. Kimura,"Face Identification using Thermal Image Processing", In IEEE International Workshop on Robot and Human Communication, pp. 374-379, 1997.
- Z. Liposzak and S. Loncaric,"Face Recognition from Profiles using Morphological Operations", In International Workshop on Recognition, Analysis, and Tracking of Faces and Gestures in Real-Time Systems, pp. 47-52, 1999.
- Andreas Lanitis, Christopher J. Taylor, and Timothy Francis Cootes,"Automatic Interpretation and Coding of Face Images using Flexible Models", IEEE Trans. on Pattern Analysis and Machine Intelligence, vol. 19, no. 7, pp. 743-756, 1997.
- Alan L. Yuille,"Deformable Templates for Face Recognition", Journal of Cognitive Neuroscience, vol. 3, no. 1, pp. 59-70, 1991.
- Laurenz Wiskott, Jean-Marc Fellous, Norbert Kruger, and Christoph von der Malsburg,"Face Recognition by Elastic Bunch Graph Matching", IEEE Trans. on Pattern Analysis and Machine Intelligence, vol. 19, no. 7, pp. 775-779, July 1997.
- P. Penev and J. Atick,"Local Feature Analysis: A General Statistical Theory for Object Representation", Network: Computation in Neural Systems, vol. 7, pp. 477-500, 1996.
- Zhao and Pietikinen,"Dynamic texture recognition using local binary patterns with an application to facial expressions", IEEE Trans. Pattern Anal. Mach. Intell. vol. 29, no. 6, pp. 915-928, 2007.
- G. Zhao, X. Huang, M. Taini, S. Li, and M. Pietikainen,"Facial expression recognition from nearinfrared videos", Image Vis. Comput, vol. 29, no. 9, pp. 607-619, 2011.
- G. Zhao, T. Ahonen, Jiri Matas, and M. Pietikainen,"Rotation-Invariant Image and Video Description With Local Binary Pattern Features", IEEE Trans. Image Process, vol. 21, no. 4, pp. 1465-1477, 2012.

Index Terms

Computer Science

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Keywords

Face Recognition Pca Lda Nnc Cos Mahacos.

