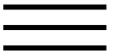


From image vector to matrix: a straightforward image projection technique – IMPCA vs. PCA.

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From image vector to matrix: a straightforward image projection technique – IMPCA vs. PCA

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Abstract

The conventional principal component analysis (PCA) and Fisher linear discriminant analysis (FLD) are both based on vectors. Rather, in this paper, a novel PCA technique directly based on original image matrices is developed for image feature extraction. Experimental results on ORL face database show that the proposed IMPCA are more powerful and efficient than conventional PCA and FLD.



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Keywords

Image principal component analysis (IMPCA); Principal component analysis (PCA); Linear discriminant analysis (FLD); Image feature extraction

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About the Author—JING-YU YANG received the B.S. Degree in Computer Science from NUST, Nanjing, China. From 1982 to 1984 he was a visiting scientist at the Coordinated Science Laboratory, University of Illinois at Urbana-Champaign. From 1993 to 1994 he was a visiting professor at the Department of Computer Science, Missuria University. And in 1998, he acted as a visiting professor at Concordia University in Canada. He is currently a professor and Chairman in the department of Computer Science at NUST. He is the author of over 100 scientific papers in computer vision, pattern recognition, and artificial intelligence. He has won more than 20 provincial

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