



The Chinese University of Hong Kong

Non-confidential Abstract of Technology Disclosure

Title:

Random Sampling for Face Recognition

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Inventor(s):

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Patent Status:

- ◆ Chinese Patent Pending
- ◆ Hong Kong Patent Pending

Non-confidential abstract:

LDA is a popular feature extraction technique for face recognition. However, it often suffers from the small sample size problem when dealing with the high dimensional face data. Fisherface and Null Space LDA (N-LDA) are two conventional approaches to address this problem. But in many cases, these LDA classifiers are overfitted to the training set and discard some useful discriminative information. In this paper, by analyzing different overfitting problems for the two kinds of LDA classifiers, we propose an approach using random subspace and bagging to improve them respectively. By random sampling on feature vector and training samples, multiple stabilized Fisherface and N-LDA classifiers are constructed. The two kinds of complementary classifiers are integrated using a fusion rule, so nearly all the discriminative information are preserved. We also apply this approach to the integration of multiple features. A robust face recognition system integrating shape, texture, and Gabor responses is finally developed.

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