

论文

## 基于不同Margin的人脸特征选择及识别方法

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摘要

Margin在机器学习中具有很重要的意义, 基于margin的特征选择方法就是从分类的角度对特征集各特征的权重进行分析。该文对不同的margin进行了分析, 提出将sample-margin和hypothesis-margin分别作为特征选择标准对SBS特征选择方法进行改进, 然后设计具有最佳超参数的SVM多项式分类器进行人脸识别。实验在FERET人脸图像库上进行并与Relief特征选择方法进行了比较, 对SVM和NN分类器的实验结果也进行了分析。实验结果显示: 该文提出的人脸识别特征选择及识别方法是有效、适用的。

关键词 [人脸识别](#) [Margin](#) [特征选择](#) [支持向量机\(SVM\)](#) [顺序后退法\(SBS\)](#)

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## Face Feature Selection and Recognition Based on Different Types of Margin

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Abstract

Margin plays an important role in research of machine learning. Margin-based feature selection methods choose the weights of features from the view of classification. This paper analyzes different types of margin and proposed methods to improve the Sequential Backward Selection (SBS) method respectively using sample-margin and hypothesis-margin as feature selection criterion. A SVM polynomial classifier, which has optimal hyper-parameters, is then designed for face recognition. Experiments are conducted on FERET face database. Recognition accuracies between the proposed methods and relief feature selection method are compared. Experiments are also conducted by respectively using SVM and Nearest Neighbor (NN) classifier. Experimental results indicate that the proposed feature selection and recognition methods are efficient for face recognition.

Key words [Face recognition](#) [Margin](#) [Feature selection](#) [Support Vector Machine \(SVM\)](#) [Sequential Backward Selection \(SBS\)](#)

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