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图形、图像、模式识别

基于UWPCA与粗糙集相结合的表情识别

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摘要 针对现有的WPCA方法强调信息不足和提取特征维数过高问题，提出了一种改进的加权主成分分析和粗糙集相结合的方法。该算法利用加权主成分分析的原理，将特征加权和主成分分析相结合，构造了一个新的双向三中心高斯分布函数作为加权函数对图像各维特征进行加权，从而得到特征向量，再使用改进的粗糙集属性约简算法对得到的特征向量进行筛选，去除冗余信息。实验结果显示，方法是有效的。

关键词 加权主成分分析（WPCA） 粗糙集 特征选择 表情分类
分类号 TP391.41

Expression recognition based on UWPCA and rough set

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Abstract
In view of the question that WPCA method emphasizes information insufficiently and the characteristic dimension extracted excessively high，rough set attribute reduction algorithm with updated WPCA applied in expression features selection is advanced.The weighting principal components analysis's principle is used.The characteristic weighted sum principal components analysis is unified.A new bidirectional three center Gaussian distribution function is constructed as the weighting function.The image characteristics of each dimension are weighted in order to get characteristic vector，and then the improved rough set properties reduction algorithm is used to filter the obtained feature vector to remove redundant information.Experimental results show that this method is effective.

Key words Weighted Principal Component Analysis（WPCA） rough set features selection expression classification

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