Abstract

Feature extraction and feature normalization is an important preprocessing technique, usually employed before classification. Feature normalization is a useful step to restrict the values of all features within predetermined ranges. However, appropriate choice of normalization technique and normalization range is an important issue, since, applying normalization on the input could change the structure of data and thereby affecting the outcome of multivariate analysis and calibration used in data mining and pattern recognition problems. This paper investigates and evaluates some popular feature normalization techniques and studies their impact on performance of classifier with application to breast tumor classification using ultrasound images. For evaluating the feature normalization techniques, back-propagation artificial neural network [BPANN] and support vector machine [SVM] classifier models are used. Results show that that normalization of features has significant effect on the classification accuracy.
Investigations on Impact of Feature Normalization Techniques on Classifier’s Performance in Breast Tumor Classification

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Index Terms

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Keywords

Feature extraction feature normalization classifier’s performance breast tumor classification.