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Abstract

In this paper, a novel feature extraction scheme is proposed, based on multiresolution fast discrete curvelet transform for computer-aided diagnosis of liver diseases. The liver is segmented from CT images using adaptive threshold detection and morphological processing. The suspected tumour region is extracted from the segmented liver using FCM clustering. The textural information obtained from the extracted tumour using Fast Discrete Curvelet Transform (FDCT) is used to train and classify the liver tumour into hemangioma and hepatoma employing artificial neural network classifier. A comparison with a similar algorithm based on Wavelet texture descriptors shows that using FDCT based texture features significantly improves the classification rate of liver tumours from CT scans.

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Index Terms

Computer Science

Soft Computing

Key words

technique
Texture analysis
Liver Tumour
Fast Discrete Curvelet Transform
FCM