



# Prediction of cirrhosis disease from radiologist liver medical image using hybrid coupled dictionary pairs on longitudinal domain approach

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Received: 17 November 2018 / Revised: 10 January 2019 / Accepted: 22 January 2019 /  
Published online: 10 February 2019  
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## Abstract

This paper presents a novel algorithm for the liver diseases fibrosis called Cirrhosis, which is considered as the most communal diseases in healthcare research. This research work introduced a technique for discriminating the cirrhotic liver from normal liver through adaptive ultrasound (AUS) instead of ultrasound (US) images with Hybrid Coupled Dictionary Pairs on Longitudinal Domain (HCDPLD). The parameters such as region covered and data structure values or variables has been analyzed using heuristic pattern producing classifier for identifying the sub-bands and edge features. The developed cirrhosis prediction strategy helps to improve the results of image resolution with the accuracy of 99.82%, Average Peak Signal to Noise Ratio (PSNR) of 3.22 dB and Structural Similarity Index (SSIM) of 0.89 through HCDPLD when compared with existing counterparts. Further Ingestible Internet of Things (IoT) sensors with activity tracker helps to monitor the patient health accurately in reliable data transfer.

**Keywords** Cirrhosis · Internet of things (IoT) · Ultrasound · Region of interest PSNR · SSIM

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