

Automated liver cancer detection

October 26 2018, by David Bradley

The examination of CT scans (computerised tomography scans), which are essentially a type of X-ray image can be used to provide clinicians with a detail view of our internal organs often of the diagnosis of various forms of cancer. The use of CT in liver cancer diagnostics is stymied to some degree by the variations of liver shape and structure between individuals and the similarity of tissues in adjoining organs in the CT image.

Now, Amita Das of the Institute of Technical Education and Research, Department of Electronics and Communication Engineering, at Siksha 'O' Anusandhan University, in Odisha, and colleagues in the Department of Surgical Oncology there, the SCB Medical College and Hospital, and the Department of Electronics Engineering, at DY Patil Ramrao Adik Institute of Technology, in Nerul, Navi Mumbai, India, have developed a new technique – adaptive fuzzy clustering-based texture analysis – for the segmentation of abdominal CT scans for classifying liver cancer. The approach is based on extracting texture, morphological, and statistical features from the scans and using them as the input for a neural network classifier to distinguish between malignant and [benign tumours](#) of the [liver](#).

They have now tested their approach with a series of 45 images and looked at sensitivity, specificity, and accuracy. The team was able to achieve an accuracy of almost 99% in detecting tumours, which they say is comparable with published results. The next step would be to feed and train the system with even more data and so improve the reliability of the technique still further and so allow an automated diagnostic approach

that does not have the potential for human error to be developed.

More information: Amita Das et al. Adaptive fuzzy clustering-based texture analysis for classifying liver cancer in abdominal CT images, *International Journal of Computational Biology and Drug Design* (2018). [DOI: 10.1504/IJCBDD.2018.094629](https://doi.org/10.1504/IJCBDD.2018.094629)

Provided by Inderscience

Citation: Automated liver cancer detection (2018, October 26) retrieved 19 April 2024 from <https://medicalxpress.com/news/2018-10-automated-liver-cancer.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.