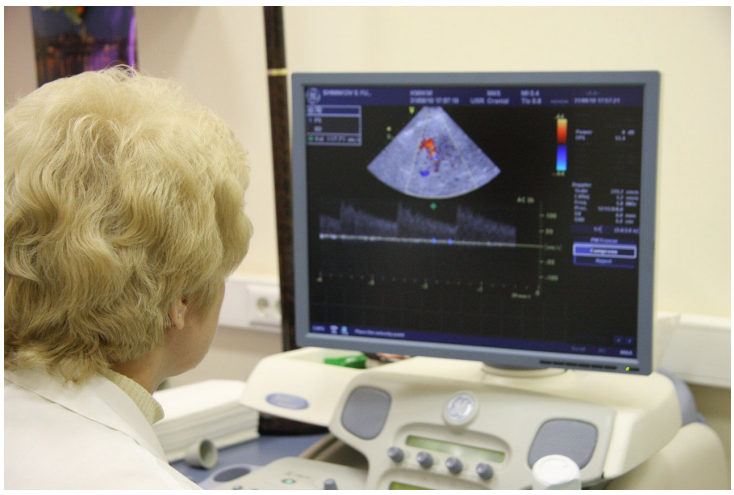
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IIT researchers develop IoT-enabled ultrasound scans

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Researchers have developed a deep-learning algorithm which can differentiate between cysts and stones in the kidney images.



A team of researchers from IIT Hyderabad has been working to use the Internet of Things (IoT) to accurately diagnose kidney and liver disorders with the help of ultrasound scanning devices. What started off as a project to develop a system that will validate the data and do a preliminary scanning of the organ — whether the organ is normal or not — has now developed into technology that can identify kidney stones and cysts and also grade a “fatty liver” classification.

The team aimed to have software which would view the images and classify the kidney images into “normal” and “needs treatment.” The research however, went beyond this goal and they now have a deep-learning algorithm which can differentiate between cysts and stones in the kidney images. In fact, they also have trained the software to look at the liver images and classify fatty livers into different grades through an automated recognition process.

The algorithm that the researchers have developed can be integrated into any platform and is flexible from the point of view of the hardware being used. They have also included a cloud-based authentication feature that allows identification of the operator by means of iris and fingerprint scans.

The researchers believe that there is a need to collaborate with hospitals and with the government and integrate this algorithm with devices. This will make it possible to extend medical support into the rural areas.