

Classification of Abnormalities in WCE

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ABSTRACT

Wireless capsule endoscopy (WCE) is a medical procedure in which a swallowable miniature optical endoscope is used to transmit color images of the gastrointestinal tract. The number of images transmitted is large, taking a significant amount of the medical expert's time to review the scan. Here, we propose a technique of automating this process to make it efficient and require less time and manpower. We perform various preprocessing tasks before feeding the image into the convolutional neural network. Patches are extracted from each image and feeding into the CNN to detect for abnormalities and thereby classify the abnormality into one of the 9 abnormality classes. We work with various networks and provide a comparative study of the results. Finally a binary classification tree is introduced in an attempt to classify the abnormalities based on the similarities between them. This classification is done using Inception V3 and Xception architectures.