

ABSTRACT

Pharyngitis, or sore throat, is a common condition caused by viral or bacterial infections. Conventional endoscopy, while effective for diagnosis, has limitations in terms of portability and accessibility. This study proposes a classification system for portable endoscopic reconstructed image data using a Convolutional Neural Network (CNN) algorithm for Healthcare IoT applications. The system is designed to address these challenges by utilizing a compact portable endoscope and an efficient CNN algorithm. This research focuses on the development of a CNN model to classify portable endoscopic reconstructed image data and detect the presence of pharyngitis. The model will be trained using a diverse dataset of throat images and evaluated based on accuracy, precision, and recall. The results of the study show that the VGG-16 model with data augmentation achieved the highest accuracy of 99%, while the ResNet50 model, with a combination of augmentation and hyperparameter tuning, demonstrated more stable performance when tested on real images. The developed system proved to be effective in improving the accuracy and efficiency of pharyngitis diagnosis and has the potential to be integrated into Healthcare IoT platforms to support remote diagnostic services.

Keywords: Pharyngitis, Portable Endoscopy, Convolutional Neural Network, Healthcare IoT.