An enhanced classification of bacteria pathogen on microscopy images using deep learning

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ABSTRACT

Classification of bacteria pathogens has significant importance issues in the clinical microbiology field. The taxonomy identification of bacteria is usually recognized through microscopy imaging. The classical procedure has the lacks detection and a high misclassification rate. Recently, computer-aided detection is an applied deep learning approach that has been growing to improve classification quality. This study proposed an enhanced classification technique to recognize the bacterial pathogen images. The DensNet201 pre-trained CNN architecture has been used for deep feature extraction and classification. In addition, the transfer learning with the freeze layer technique applied can enhance the accuracy performance and reduce the false-positive rate. The experimental result can improve state-of-the-art decision-making.

KEYWORDS

Bacterial pathogen; CNN; Deep learning; Image classification; Transfer learning

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