

Enhanced Chest X-Ray Classification Model for Covid-19 Patients Using HOG and LBP

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Abstract - Several alarming health challenges are urging medical experts and practitioners to research and develop new approaches to diagnose, detect and control the early spread of deadly diseases. One of the most challenging is Coronavirus Infection (Covid-19). Models have been proposed to detect and diagnose early infection of the virus to attain proper precautions against the Covid-19 virus. However, some researchers adopt parameter optimization to attain better accuracy on the Chest X-ray images of covid-19 and other related diseases. Hence, this research work adopts a hybridized cascaded feature extraction technique (Local Binary Pattern LBP and Histogram of Oriented Gradients HOG) and Convolutional Neural Network CNN for the deep learning classification model. The merging of LBP and HOG feature extraction significantly improved the performance level of the deep-learning CNN classifier. As a result, 95% accuracy, 92% precision, and 93% recall are attained by the proposed model.

Keywords— Hybridized, Covid-19, Prediction, Feature Extraction.