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Paper ID: 1570943624

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Paper Title: Multi-Disease Classification of COVID-19 in Chest Radiographs using Ensemble of Optimized Deep Learning Models

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## Abstract

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In recent years, Covid has become the top concern of almost everyone around the world. Identifying Covid infections is extremely important for appropriate treatment methods. Furthermore, classifying Covid along with other lung diseases also plays an important role. This article proposes a method for diagnosing Covid and other common lung diseases on chest X-ray images using CADs. CNN models are used to learn informative features from patient chest X-ray images. The performance of diagnosis is optimized using the area under the curve maximization and proximal epoch stochastic optimization. Later, optimized results are employed to compute the most probabilities prediction and produce the latest result. The proposed method was tested on a large public radiograph dataset and reached 98.07%, 96.92%, and 96.36% for accuracy, precision, and recall, respectively. The performance is promising and comparable to other previous research but in a more complex dataset. Overall, this proposed method is trustworthy for medical doctors on COVID-19 detection among lung disease problems.

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