

CLASSIFICATION AND DIAGNOSIS OF COVID19 AND PNEUMONIA USING DEEP LEARNING APPROACH

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ABSTRACT

Covid19 can be introduced as the factor that changed the lifestyle and the pattern of modern people, the most. Since its emergence in late 2019 in Wuhan, China, the Covid-19 virus has spread all around the globe within a very short period resulting in millions of confirmed Covid-19 cases, increasing day by day. Although there are several ways of tests which can be performed to test for Covid-19 virus, most of the times, the amount of available test kits is not sufficient during the peaks of the covid-19 waves and the cost of the test kits is quite high to the extend where some people are not able to afford the cost. In addition, a medical professional's help is needed to perform the existing tests, where the health professional is also at risk of getting exposed to an infection, while performing the tests. In addition to Covid-19, pneumonia can be identified as another major disease that occurs in the human respiratory system which often gets mistakenly identified, occurring at a considerably larger number of deaths a year.

As per the aforementioned reasons, today, it is very much important to have a way that is able to identify both covid-19 and pneumonia which also addresses the issues that have arisen regarding the covid-19 tests, cost and the lack of required equipment. As a solution, alternative ways that can be used for the aforementioned purpose should be developed to address this issue and to minimise the social effects it has on the community.

Therefore, this study attempts to introduce a new methodology to identify both covid-19 and pneumonia given the chest x-ray of the patient which will identify the status of the given x-ray, stating whether the person is healthy or affected with covid-19 pneumonia, non-covid-19 pneumonia or bacterial pneumonia.

Keywords: Software Development Life Cycle, Deep Learning, Transfer Learning, Image Classification