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## (54) Title of the invention: Disease Detection and Classification from chest X-rays Images for Pneumonia and Covid-19 Viral Infections

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## (57) Abstract:

The Covid-19 pandemic has been a deadly pandemic that has affected the whole world. It was a viral infection that affected almost everyone in some way or the other, and its early detection is critical to control cases spreading and mortality. The actual approach for diagnosis test is the Reverse-Transcription Polymerase Chain Reaction (RT-PCR) and the taking of a chest X-ray film follows. Because the results of the PCR test may take several hours to become available, information revealed from the chest X-ray plays an important role for a rapid clinical assessment. This means if the clinical condition and the chest X-ray are normal, the patient is sent home while awaiting the results of the etiological test. But if the X-ray shows pathological findings, the suspected patient will be admitted to the hospital for close monitoring. The proposed system involves Deep-Learning (DL) methods in Artificial Intelligence (AI) play a dominant role as high-performance classifiers in the detection of the disease using chest X-rays.

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