

A Comprehensive Review of AI and ML Applications in Combating the Covid-19 Pandemic

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Abstract: *By examining medical data, artificial intelligence (AI) and machine learning (ML) have shifted the paradigm in healthcare and may be utilised for forecasting and decision assistance. Recent research has demonstrated that COVID-19 can be fought with the use of AI and ML. This article's goal is to provide an overview of current research that have used AI and machine learning to analyse the epidemic. 49 articles were ultimately chosen through an inclusion-exclusion procedure from an original collection of 634 articles. In this article, we looked at the goals of the research that have already been done (such as the use of AI and ML to combat the COVID-19 pandemic); the background of the studies; and (i.e., whether it had a global view or was centred on a particular geographical setting; the kind and size of the dataset; and the methodology, algorithms, and methods employed in the prediction or diagnosis procedures.) By emphasising the prediction/classification accuracy of the algorithms and methodologies, we have mapped them with the different types of data. We divided the study goals into four divisions based on our analysis: illness detection, epidemic forecasting, sustainable development, and disease diagnostics. We noticed that the majority of these investigations utilised chest X-ray and CT scan image data along with deep learning techniques. In this study, we provide an overview of the six potential areas for further research that we have identified.*

Impact Declaration: *In the fight against the COVID-19 pandemic, machine learning (ML) and artificial intelligence (AI) techniques have been extensively deployed. A relatively small number of comprehensive literature reviews have been undertaken to synthesise the information and determine the future research agenda, including the review on data science for COVID-19 in this article that was previously published. We analysed and aggregated contemporary material that focuses on the uses and applications of AI and ML to combat COVID-19 for this study. In order to direct researchers in doing future study, we have chosen seven potential research paths. These are the ones that are most crucial: develop Support the health care workforce, investigate the influence and variety in research findings based on various forms of data, investigate novel treatment alternatives, and so on.*

Keywords: Artificial intelligence, COVID-19, coronavirus, deep learning, epidemic, literature review, machine learning, pandemic.

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