

Title	A Survey of Convolutional Neural Networks on COVID-19 Diagnosis【Project Report】
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The Covid-19 pandemic has caused a worldwide health crisis, leading to significant disruptions and challenges for public health professionals. With the rise of the pandemic, the use of artificial intelligence (AI) technologies, such as convolutional neural networks (CNNs), has increased as a promising tool for aiding diagnosis and treatment. CNNs are a type of deep learning algorithm that has been effectively used in various imaging tasks, including image classification and object detection.

In this paper, we present a comprehensive survey of the current literature on the application of CNNs in the diagnosis of Covid-19. We begin by introducing medicine-related concepts such as X-rays and lung infection diseases, with a specific focus on Covid-19. This provides the necessary background information for understanding the significance of using CNNs for Covid-19 diagnosis.

We then systematically present a summary of the CNN architecture and mechanism, including its technical aspects such as convolutional and pooling layers, activation functions, and loss functions. This provides a comprehensive understanding of the workings of CNNs, which is crucial for understanding their application in the diagnosis of Covid-19.

We also reproduce a Covid-19 chest X-ray image classification experiment using an open-source model and dataset. The experiment provides practical insights into the performance of CNNs in the diagnosis of Covid-19 and highlights their potential as an effective tool. With the help of saliency maps, we also explore the implications of CNNs-based Covid-19 diagnosis, specifically the areas that the model considers important. This analysis provides valuable insights into the workings of CNNs and highlights the need for further research in this area.

We conclude the paper by discussing the current research trends in using CNNs for Covid-19 diagnosis and the contribution of we to this survey. Based on the previous, we provide suggestions for future directions in this field.

The survey presented in this paper demonstrates the potential of CNNs as an effective aid to Covid-19 diagnosis. The advantages of CNNs include their ability to classify images and detect objects accurately, as their speed and flexibility. However, the accuracy of CNNs depends on the availability of high-quality training data, and further research is needed to improve the accuracy and robustness of the models.

In conclusion, we provide a comprehensive overview of the current literature on the application of CNNs in the diagnosis of Covid-19. The survey highlights the potential of CNNs as an effective tool in aiding Covid-19

diagnosis while also pointing out the need for further research to improve their accuracy and robustness. This paper serves as a valuable resource for researchers, practitioners, and students interested in the application of AI technologies in the diagnosis of Covid-19.