



Harnessing intelligent technologies to curb COVID-19 pandemic: taxonomy and open challenges

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Received: 29 April 2021 / Accepted: 6 July 2021 / Published online: 30 July 2021

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Abstract

The world has changed dramatically since the outbreak of COVID-19 pandemic. This has not only affected the humanity, but has also badly damaged the world's socio-economic system. Currently, people are looking for a magical solution to overcome this pandemic. Similarly, scientists across the globe are working to find remedies to overcome this challenge. The role of technologies is not far behind in this situation, which attracts many sectors from government agencies to medical practitioners, and market analysts. This is quite true that in a few months of time, scientists, researchers, and industrialists have come up with some acceptable innovative solutions and harnessing existing technologies to stop the spread of COVID-19. Therefore, it is pertinent to highlight the role of intelligent technologies, which play a pivotal role in curbing this pandemic. In this paper, we devise a taxonomy related to the technologies being used in the current pandemic. We show that the most prominent technologies are artificial intelligence, machine learning, cloud computing, big data analytics, and blockchain. Moreover, we highlight some key open challenges, which technologists might face to control this outbreak. Finally, we conclude that to impede this pandemic, a collective effort is required from different professionals in support of using existing and new technologies. Finally, we conclude that to stop this pandemic, machine learning approaches with integration of cloud computing using high performance computing could provision the pandemic with minimum cost and time.

Keywords COVID-19 · Technology · Artificial Intelligence · Big Data analytics · Blockchain

Mathematics Subject Classification 97P80 · 68T01 · 97Pxx

1 Introduction

The world has been shattered by COVID-19 pandemic [1], which was first detected in 2019 in Wuhan, China [2]. Nobody was expecting such a fast spread of this virus across

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