

## Application of Healthcare Management Technologies for COVID-19 Pandemic Using Internet of Things and Machine Learning Algorithms

Nooruldeen Q. Ismaeel<sup>1</sup> · Husam Jasim Mohammed<sup>2</sup> · Ibrahim Zeghaiton Chaloob<sup>3</sup> · Ameer Sardar Kwekha-Rashid<sup>4</sup> · Bilal Alhayani<sup>5</sup> · Ahmed Alkhayyat<sup>6</sup> · Sara Taher Abbas<sup>7</sup> · Mohammed Dauwed<sup>8</sup> · Omar A. Alkawak<sup>9</sup>

Accepted: 13 July 2023 © The Author(s), under exclusive licence to Springer Science+Business Media, LLC, part of Springer Nature 2023

## Abstract

Internet of Things (IoT) has acquired persuading research ground as another examination subject under big assortment regards scholarly and modern disciplines, particularly under healthcare. IoT transformation has been reconstructing current healthcare frameworks through consolidating innovative, financial, and social possibilities. It was developing health care frameworks through customary to extra customized healthcare frameworks by kinds of patients may analyzed, handled, and checked all the extra without any problem. Since from the time of pandemic began, there was quick exertion under various examination networks to take advantage of a big assortment of advances to battle this overall danger, and IoT innovation is one of pioneers around here. IoTs sensor-based innovation gives a brilliant capacity to decrease the danger of medical procedure during convoluted cases and supportive for COVID-19 sort pandemic. In the clinical field, IoTs centre is to assist with playing out the treatment of various COVID-19 cases unequivocally. It makes the specialist work simpler through limiting dangers and expanding general presentation. Through utilizing this innovation, specialists can undoubtedly distinguish changes in basic boundaries of the COVID-19 patient. This paper overviews the job of IoT based advancements under COVID-19 and surveys the best in class structures, stages, applications, and modern IoT based arrangements fighting COVID-19 of every three primary stages, including early conclusion, quarantine time, and after recuperation. In conclusion, the paper is revealing that all machine-learning algorithms tested in this study can be used in the prediction of healthcare with a high accuracy; however, the SVM and K-NN algorithms are the best fitting algorithms among all algorithms. Then Naïve Bayes, Decision Table, and Decision Stump follow it respectively.

Keywords IoT  $\cdot$  COVID-19  $\cdot$  Healthcare system  $\cdot$  Medical  $\cdot$  Corona virus  $\cdot$  Machine learning algorithms

Extended author information available on the last page of the article