

# Chapter 4

## A Study on COVID-19 Prediction and Detection With Artificial Intelligence- Based Real-Time Healthcare Monitoring Systems

**Sonia Rani**

*School of Computer Applications, Lovely Professional University, India*

### **ABSTRACT**

*COVID-19 is a major pandemic disease exploited in this century in the whole world. COVID-19 was started om Wuhan, China in November 2019. The main reason for spreading this disease was that test kits were not available in huge amounts to diagnose the COVID-19, and no vaccine was available to cure this disease. Many researchers are trying to make a vaccine for the treatment of this disease. Prevention is better than cure. Therefore, prevention from this epidemic disease is diagnosis at early stages, and treatment should be given to the patient at an accurate time so that patient can escape death. Millions of people were infected by this disease, and most of them lost their lives after suffering from this disease. As we all know, this disease diagnosis test is complicated. Therefore, many smart apps like Siri, Cova App, Arogya Setu App, etc. and digital systems are used to detect and diagnose cases of infected people. These systems are embedded with artificial intelligence techniques. For diagnosis, the COVID-19 computer tomography is based on deep learning convolutional neural network.*

### **OBJECTIVES OF THIS REVIEW**

1. To identify use of Deep learning methods to detect the computer tomography of covid patients.
2. To Analysis of Artificial Intelligence based Apps are used to detect the covid symptoms.
3. To identify the maximum use of machine learning methods used to develop the real-time health monitoring system.

DOI: 10.4018/978-1-7998-7188-0.ch004

## **INTRODUCTION**

Covid-19 is also called coronavirus is an epidemic disease of this century. This disease started in China. Now it is spread in the whole world. Due to the increase in positive cases, Governments of every country has ordered the lockdown, social distancing, curfews, and done work from home to decrease the virus diseased rate. The first case of covid-19 was founded in Wuhan city of China. WHO (world health organization) declared on Jan 31, 2020, this covid-19 virus as PHEIC (public health emergency of international concern). Presently, most of the citizens from several countries with China shown their serious concerns about the diagnosis, estimate, and rectify of the virus infection (Ping, 2020). The Wuhan centre's Epidemiological investigators exposed the covid-19 from that patient who worked in the local seafood market, admitted to the central hospital on 26 Dec 2019. Investigators suggested that the covid-19 outbreak-related is with a seafood market in Wuhan. After investigation, founded that SARS-like COVS categorize into RBD sequences and amino acid. The receptor ACE2 of the human body affected by the 3 Bats SARS- with COVS (Wu, 2020). SARS-COVs was recognized in animal marketplaces, authors developed a method to quickly screen ancestry B beta coronaviruses, such as SARS-COVs and the current SARS-COV-2. Firstly, it appeared in humans in 2003 afterward spreading from animals in open-air markets in China. Afterward, numerous natively related viruses were identified in Chinese horseshoe bats, which directed in wild animals everywhere in the world (Letko and Marzi, 2020). The covid-19 is credentialed and classified by an extensive of grave respirational disease in humans of Wuhan, China. which started on 12 Dec 2019, had produced 2,794 laboratory-confirmed cases with 80 deaths by 26 Jan 2020. This virus epidemic and that started from a seafood local market has full-grown considerably to contaminate 2,761 people in China. Distinctive clinical indications of these patients are temperature, dry cough, breathing problems, pneumonia, and headache. Seven patients suffered from which six are sellers from the seafood market. They were sent to the laboratory at the Wuhan Institute of virology for the treatment. 2019-CoVID equals to 96% with the genome-wide level to a bat coronavirus. This virus exists to types of SARSr-CoV confirmed by pairwise protein system study of 7 preserved non-structural proteins. "It is quarantined from the bronchoalveolar lavage liquid of a critically ill patient could be deactivated by sera from several patients and also established that 2019-nCoV routines the similar cell entry receptor ACE2 (angiotensin-converting enzyme II) as SARS-CoV" (Zhou, et al. (2020). At present medical tests of covid-19 are not available at high scale because of time, health care specialists, testing kits are limited (Subirana, et al. 2020).

## **ARTIFICIAL INTELLIGENCE INITIATION**

A machine and human mind could be a connection between behaviour and experience, rather than on the specific behaviour of a human. A machine works like as human thinks. "Artificial intelligence" also substituted by "computer intelligence" or "machine intelligence". "Intelligence is the capacity of an information-processing system to adapt to its environment while operating with insufficient knowledge and resources" (Wang, 2019). A conference of artificial intelligence at Dartmouth College was introduced in 1956. They developed the idea in 1975-1980 that AI can use in many branches of science like psychology and several areas (Mijwel, 2015). Artificial Intelligence was coined out by the "British logician and computer pioneer Alan Turing in 1936 digital computing machine is called the universal Turing machine. The first AI program code run in Britain in Manchester and Cambridge in 1951-1952.

10 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:  
[www.igi-global.com/chapter/a-study-on-covid-19-prediction-and-detection-with-artificial-intelligence-based-real-time-healthcare-monitoring-systems/286242](http://www.igi-global.com/chapter/a-study-on-covid-19-prediction-and-detection-with-artificial-intelligence-based-real-time-healthcare-monitoring-systems/286242)

## Related Content

---

### Quorum Sensing Digital Simulations for the Emergence of Scalable and Cooperative Artificial Networks

Nedjma Djezzar, Iñaki Fernández Pérez, Nouredine Djediand Yves Duthen (2019). *International Journal of Artificial Intelligence and Machine Learning* (pp. 13-34).

[www.irma-international.org/article/quorum-sensing-digital-simulations-for-the-emergence-of-scalable-and-cooperative-artificial-networks/233888](http://www.irma-international.org/article/quorum-sensing-digital-simulations-for-the-emergence-of-scalable-and-cooperative-artificial-networks/233888)

### Multilayer Neural Network Technique for Parsing the Natural Language Sentences

Manu Pratap Singh, Sukrati Chaturvediand Deepak D. Shudhalwar (2019). *International Journal of Artificial Intelligence and Machine Learning* (pp. 22-38).

[www.irma-international.org/article/multilayer-neural-network-technique-for-parsing-the-natural-language-sentences/238126](http://www.irma-international.org/article/multilayer-neural-network-technique-for-parsing-the-natural-language-sentences/238126)

### A Survey on Diagnosis of Hazardous Gas Emission Using AI Techniques

N. Madhuramand R. Kalpana (2023). *Handbook of Research on Machine Learning-Enabled IoT for Smart Applications Across Industries* (pp. 269-291).

[www.irma-international.org/chapter/a-survey-on-diagnosis-of-hazardous-gas-emission-using-ai-techniques/326001](http://www.irma-international.org/chapter/a-survey-on-diagnosis-of-hazardous-gas-emission-using-ai-techniques/326001)

### Quadruped Robots With Bio-Inspired Gait Generation Methods Using Sole Pressure Sensory Feedback

Yuki Takei, Katsuyuki Morishitaand Ken Saito (2022). *Handbook of Research on New Investigations in Artificial Life, AI, and Machine Learning* (pp. 18-42).

[www.irma-international.org/chapter/quadruped-robots-with-bio-inspired-gait-generation-methods-using-sole-pressure-sensory-feedback/296799](http://www.irma-international.org/chapter/quadruped-robots-with-bio-inspired-gait-generation-methods-using-sole-pressure-sensory-feedback/296799)

### Churn Prediction in a Pay-TV Company via Data Classification

Ilayda Ulku, Fadime Uney Yuksektepe, Oznur Yilmaz, Merve Ulku Aktasand Nergiz Akbalik (2021). *International Journal of Artificial Intelligence and Machine Learning* (pp. 39-53).

[www.irma-international.org/article/churn-prediction-in-a-pay-tv-company-via-data-classification/266495](http://www.irma-international.org/article/churn-prediction-in-a-pay-tv-company-via-data-classification/266495)