Different Prediction Models for Novel Corona Virus (Covid-19)

Souvik Ganguli1*

Thapar Institute of Engineering & Technology, Patiala-147004, Punjab, India

The paper deals with a very recent topic, the novel corona virus or COVID-19 which took the world by storm. The pandemic stretched out its wings at every corner of the world. Scientists have worked hard to diagnose, track, and provide effective care to get people out of this disease since its occurrence in China, which then spread through Europe, America, including India as well. While one group of researchers is interested in the production of medicines and vaccines to counter this pandemic, the other collection of researchers aims at early identification of the symptoms, tracking the conditions of the persons affected and proposing a potential cure with the aid of several artificial intelligence (AI) techniques. Chinese researchers developed a method for predicting the outbreak of this disease. In addition, mathematicians at various universities have also been working on this to test the potential harm it may do to the world's population. Some researchers focused on the estimation of patients' mortality risk with the assistance of AI technique to aid medical decision taking. Even models of hybrid AI were evolved to predict covid-19 more accurately. This paper thus provides a consolidated study of the various mathematical models developed by the researchers to make predictions about the novel corona virus, coined in the literature as COVID-19. Also highlighted are the uses of AI techniques to give the prediction models with greater accuracy. The chapter has also suggested some future directions for carrying forward the research.

The paper deals with a very recent topic, the novel corona virus or COVID-19 which took the world by storm. The pandemic stretched out its wings at every corner of the world. Scientists have worked hard to diagnose, track, and provide effective care to get people out of this disease since its occurrence in China, which then spread through Europe, America, including India as well. While one group of researchers is interested in the production of medicines and vaccines to counter this pandemic, the other collection of researchers aims at early identification of the symptoms, tracking the conditions of the persons affected and proposing a potential cure with the aid of several artificial intelligence (AI) techniques. Chinese researchers developed a method for predicting the outbreak of this disease. In addition, mathematicians at various

universities have also been working on this to test the potential harm it may do to the world's population. Some researchers focused on the estimation of patients' mortality risk with the assistance of AI technique to aid medical decision taking. Even models of hybrid AI were evolved to predict covid-19 more accurately. This paper thus provides a consolidated study of the various mathematical models developed by the researchers to make predictions about the novel corona virus, coined in the literature as COVID-19. Also highlighted are the uses of AI techniques to give the prediction models with greater accuracy. The chapter has also suggested some future directions for carrying forward the research.

Biography

Dr. Souvik Ganguli is presently working as the Assistant Professor in the Department of Electrical and Instrumentation Engineering, Thapar Institute of Engineering and Technology, Patiala. He has pursued B. Tech (Electrical Engineering) and M. Tech (Mechatronics) in the years 2002 and 2008 respectively. He has completed his PhD degree in system identification and control from Thapar Institute of Engineering and Technology in October 2019. He has a total of 16 years of work experience in industry, teaching and research. His research interests include model order reduction, identification and control, nature inspired metaheuristic algorithms, electronic devices and renewable energy applications. He has nearly 75 publications that have been cited over 100 times, and his publication H-index is 6 and has been serving as a reviewer of several reputed journals.