

# Digital Platform to Defeat COVID-19

*Dr. Manas Ranjan Senapati  
Soubhagya Ranjan Mallick*

**N**ovel Corona Virus disease (COVID-19) was originated from Wuhan, China, on 31<sup>st</sup> December 2019. Novel Corona Virus disease (COVID-19) has become a pandemic as the disease continues to spread across the globe. People are striving to protect themselves, their families, their loved ones and all human being against this pandemic. There's no particular vaccine to combat it and doctors can only treat the symptoms of this disease. Different treatment options have been adapted on hit and trial method and some existing drugs seem to be associated with positive results – but it is not the exact medicine for COVID-19, much more research is needed.

Whether it's in Social Distancing, diagnostics or proper treatment management, the innovators of most of the countries have turned towards inventing and adapting new technologies to confront these outbreaks. "Technology plays a great role for helping us get through this global health crisis, Patient tracking and predicting its spread, protecting medical staffs, localisation concept is used to provide accurate geolocation of the individuals, education for the homebound, etc." Different devices and advanced technologies have been developed and implemented to win the war against COVID-19. In this pandemic, advanced technology tools are the monitoring and controlling weapons of corona virus outbreaks,

as humans cannot operate at a speed of AI powered machines. Here an attempt has been made to discuss about some of the possible technological concepts and their role to fight against COVID-19, which could possibly help to control the outbreak.

## QUANTUM COMPUTERS

To win the war against COVID-19 outbreak, quantum computing plays a vital role for providing services to better pandemic control. Supercomputers are used for quickly and carefully mapping the molecular structure of corona virus so that it will be easy for developing medicines and treatments. IBM supercomputer is being deployed by the researchers to find out the chemical compounds to fight against corona virus. This super computer generate results within 1-2 days rather than months which could have taken by standard computing system to produce the same result. Till date, the quantum computer has supported researchers to identify 77 molecule compounds.

## MACHINE LEARNING TO FIND A TREATMENT

By gathering sufficient quality data and implementing artificial intelligence concept, which could be a powerful tool used for predicting the disease's future trend and even searching for possible treatments. Different biotechnology

companies are using **machine learning concept** to develop treatments based on antibodies from patients who have recovered from the disease COVID-19. These companies have used Artificial Intelligence (AI) concept to analyze more than millions of immune cells as they desire to search for those that are able to produce antibodies which help patients recover.

### **FACIAL RECOGNITION AND BIG DATA**

Different organizations have developed dashboards for accessing the public information to monitor the corona virus using Big Data. Most of the developed cities across the globe have installed infrared temperature detection and Face recognition techniques.

Al Jazeera has reported that telecom companies China are providing facility of Mobile sent text messages to their state media agencies, informing about the person who have been infected. This message includes the details about the person's travel history. Some Companies like Panasonic, Sense Time and FacePro have also developed certain kind of software which can easily identify the people without face masks.

### **SATELLITE TECHNOLOGY**

Satellite technology provides better service in social distancing. Advanced countries are using both macro and micro level satellites for providing information about the social distancing and stay at home information. Satellite imageries system are used for providing the information about the different activities happening or not-happening across the major cities, crowded places, industrial sites, farming activity, tourist places, and on different high ways during the lockdowns or normal days.

### **ROBOTS**

Robots are the game changers in COVID-19 as they reduce the human-to-human interaction and the potential danger expected for the life of the medical staff members. Robots are being used to disinfect, deliver medicine, measure

temperatures, food preparation and communicate among the isolated members. Danish Company in China providing UVD Robots which can disinfect the patient cabins based on the statement. UVD Robot moves around patient rooms autonomously and emitting right amount of ultraviolet light covering all surface area in order to kill Corona viruses and other bacteria. Some hospitals of US are also using Robots to communicate among the doctors and patients through a screen and it was equipped with a stethoscope.

### **HEALTH SENSORS AND MOBILE APPS**

Mobile applications are being used for tracking and preventing the spread of corona virus disease. Utilizing the proper surveillance network for public goodness, the Government of India has developed a mobile application **Aarogya Setu** to connect essential health services among people of India to fight against COVID-19.

Australia has developed a mobile APP already used in Singapore for contact tracing by detecting whether the people had spent more than 15 minutes with other peoples who may have been infected by COVID-19.

Chinese Government in association with Alibaba and Tencent to develop a color-coded health rating system which played a vital role in China for tracking millions of people daily. The mobile app was first deployed in Hangzhou in collaboration with Alibaba. It consists of three colors to people — yellow, green and red — based on their travel and medical histories.

---

Dr. Manas Ranjan Senapati, Dean Science, BPUT and Professor of Chemistry, Trident Academy of Technology, Bhubaneswar-751024, Email: dr\_senapati@yahoo.com

Soubhagya Ranjan Mallick, Asst. Professor in Computer Science & Engineering, Trident Academy of Technology, Bhubaneswar-751024, Email: soubhagya.mallick@gmail.com.