

A Simplify Detection of Covid - 19 stages used Modified Deep Learning Algorithm

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Abstract: Today worldwide our illness problems simply solved computer-based techniques. Datasets are easily shortcut solution for remedials. Images was highly observed term for current society. Images was easy identification and highly attract. so, we provide simple identification or simple solution for society problems. medical industry used maximum of simply and accurate solution gather from techniques in image processing. We implement use of deep learning algorithm methods shrtout social covid problems. we took covid cases segregate and identifying pattern matching to lungs images problem. we took covid cases lung images with segregate and analyse to identifying covid patients and provide accurate result

Key words: Neural Networks, Deep learning, Multilayer Perceptron, FNN, Pattern

Introduction: Today all the activities based on computer technology, most of the actions executing in this computer technology-based processes. computer technology is provided simple and short solution for all the actions. image processing is one of the powerful solutions for agriculture, medical, engineering, standard solution for stop or prevention of more unwanted issues. Computer vision is an interdisciplinary field that has been gaining huge amounts of traction in the recent years. our implementation using five layers to segregation of processes in input layer, hidden layer, mini output layer, status layer and output layer

Review of Literature

Covid disease is the biggest problem in the world. Every year we are facing the metamorphosis of the corona virus. When the virus gets in your body, it comes into contact with the mucous membranes that line your nose, mouth, and eyes [1][2]. The virus enters a healthy cell and uses the cell to make new virus parts. It multiplies, and the new viruses infect nearby cells [3][4].

This coronavirus can infect the upper or lower part of your respiratory tract [5][6]. It travels down your airways. The lining can become irritated and inflamed Corona virus scientists are learning more every day about what it can do to your lungs [7][8]. They believe that the effects on your body are similar to those of two other coronavirus diseases, severe and middle acute respiratory syndrome [9]. As the infection travels your respiratory tract, your immune system fights back. Your lungs and airways swell and become inflamed. This can start in one part of your lung and spread [10].

Day to day face corona virus suffer from our life and economic status and business. In this stage proper solution are lot in the world [11]. We try to provide the solution through concept of neural network concepts.

Neural Networks consist of Neurons. Each Neuron receives signals as an input, multiplies them by weights, sums them up and applies a non-linear function. These neurons are stacked next to each other and organized in layers.

Neural Networks are able to learn the desired function using big amounts of data and an iterative algorithm [12]. We input the network with data, it produces an output, we compare that output with a desired one (result) and we readjust the weights (density and time) based on the difference. And repeat. And repeat. The adjustment of weights is performed using a non-linear optimization technique. After a while, the network will become really good at producing the output.

Deep Learning is a collection of algorithms inspired by the workings of the human brain in processing data and creating patterns for use in decision making, which are expanding and improving on the idea of a single model architecture called Artificial Neural Network [13].

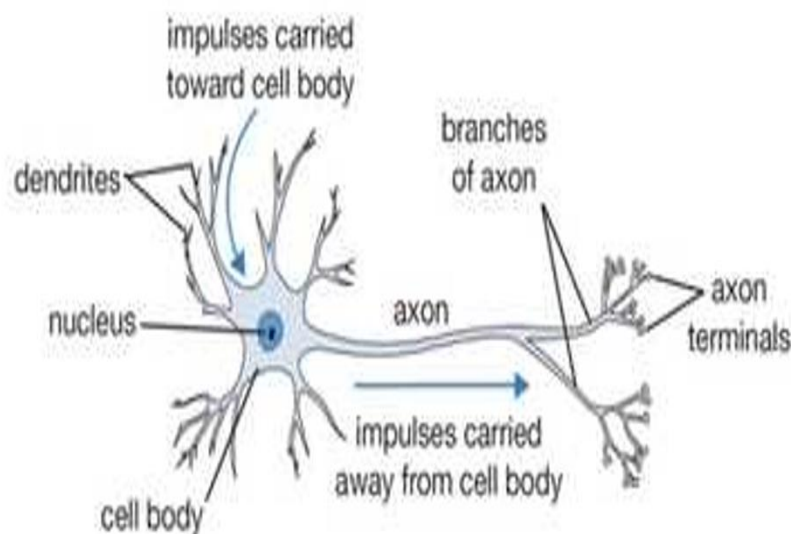


Figure -1 Neural Networks

Proposed Methodology

COVID-19 is a respiratory disease, one that especially reaches into your respiratory tract, which includes your lungs. COVID-19 can cause a range of breathing problems, from mild to critical. This coronavirus can infect the upper or lower part of your respiratory tract. It travels down your airways. The lining can become irritated and inflamed. In some cases, the infection can reach all the way down into your alveoli. COVID-19 virus are many types. Every type split many stages are there, these are support to monitor the patient condition.

COVID-19 virus disease are three significant stages: -

1. Mild stage
2. Severe stage
3. Critical Stage

We proposed technology mixing of Feedforward Neural Networks and deep belief network, multilayer perceptron algorithms are usually fully connected, which means that every neuron in a layer is connected with all the other neurons in the next layers. The described structure is called Multilayer Perceptron Single-layer perceptron can only learn linearly separable patterns, but a multilayer perceptron is able to learn non-linear relationships between the data. They are exceptionally well on tasks like classification and regression.

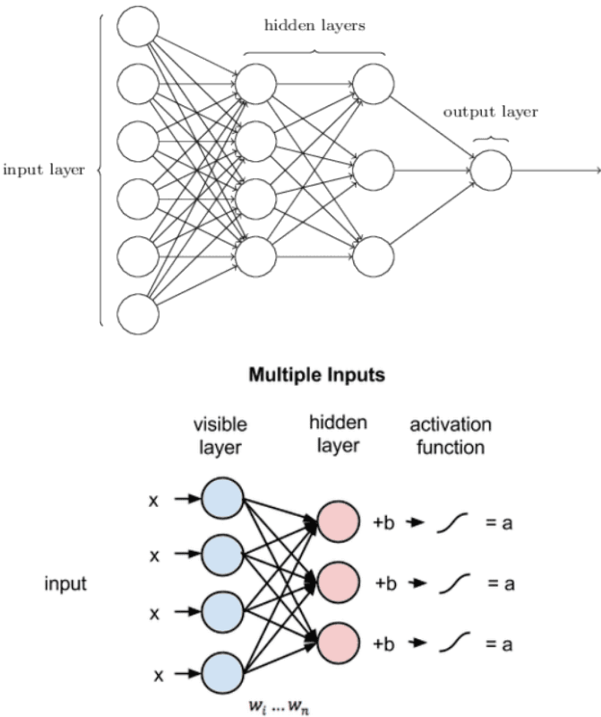


Figure-2 Feedforward Neural Networks

Figure-3 Deep Belief Networks

By combining our existing algorithms and modified hidden layer and function layers. We can detect the types of viruses we need in a modified deep learning algorithm. A modified deep learning algorithm first detects which type of covid -19 virus is infected. For this use hidden layer to detect the presence of virus. Here we can use function layer method repeatedly to find its covid 19 virus effects.

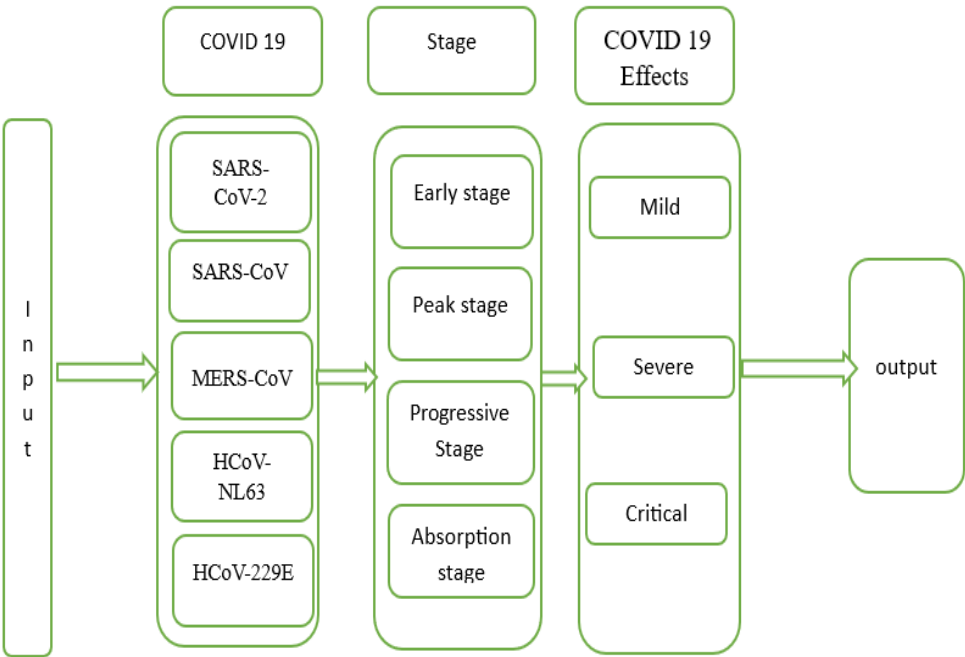


Figure -4 MDLA algorithm

Covid 19 viruses spread in our body. Hour & day-based monitoring system is essential in every stage. who have other health conditions like heart disease, cancer, and diabetes may have more monitoring need in covid 19 causes. Individual monitoring system and relevant related disease status are first in our process. We consider first stage in

First of all, it is important to find out what type of fever it is and then it will be possible to find out whether it is normal FLU or Covid 19. The tiny sacs found in the lungs, which exchange carbon dioxide and oxygen are known as alveoli. Structure of alveoli., the covid 19 infection can reach all the way down into your alveoli. Depending on the nature of the spread, it can be diagnosed which type of virus. Minimum five type of virus found here. At end of this stage breast examination, we can find out which virus is infected

$$K = \sum_{i=0}^j A$$

A-Type of Virus

I, J -Other Diseases

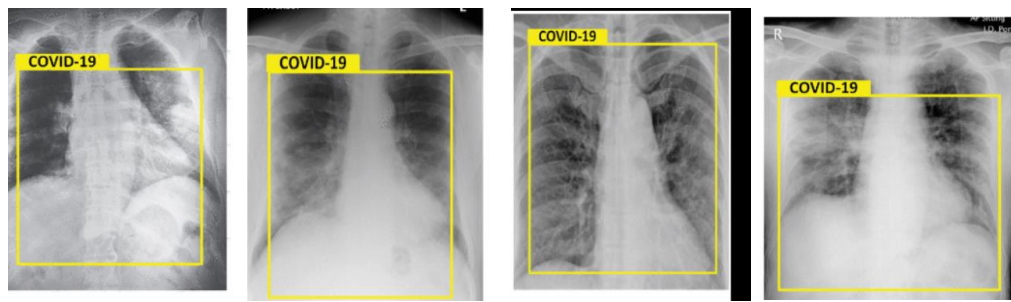


Figure -5 Types of Covid 19 virus

Second stage in the nature virus can be determined by the number of days it has been infected. After identifying the nature of the virus, it is necessary to find out how many days it takes for the virus to start spreading. The rate of spread of the virus and its impact should be calculated and treated accordingly to this stage. At this point it is important to monitor the nature of its spread 0 to 14 days

$$M = \sum_{o=0}^p B$$

B-Stages

o, p -0 to 14 Days

Covid 19 spread status in different hours

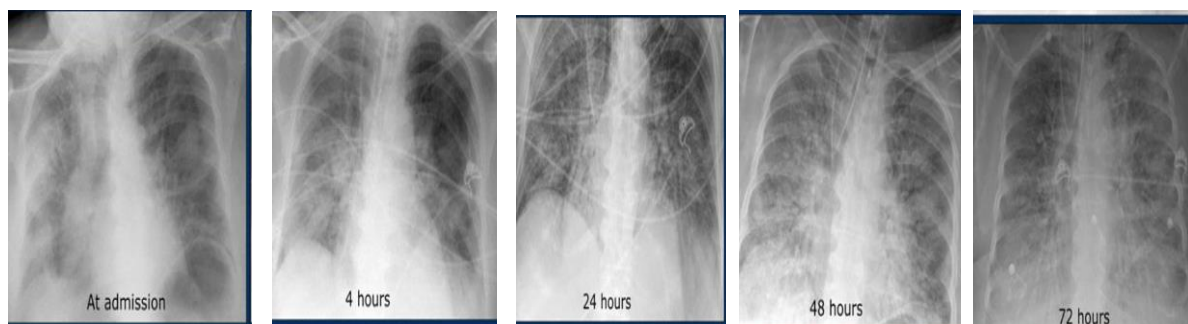


Figure -6 Covid -19 spread status

Third Stage depending on the virus it can be classified as mild to severe. This condition is very important and it should be treated keeping in mind the nature of the virus spread and its effects. In this case, we can detect only the effect of virus transmission using modified deep learning algorithm with lungs images. Using our modified deep learning algorithm, we identify accurate results, this makes treatment easier.

$$N = \sum_{x=0}^y C$$

C-Effects

x, y – Mild, Moderate, Critical

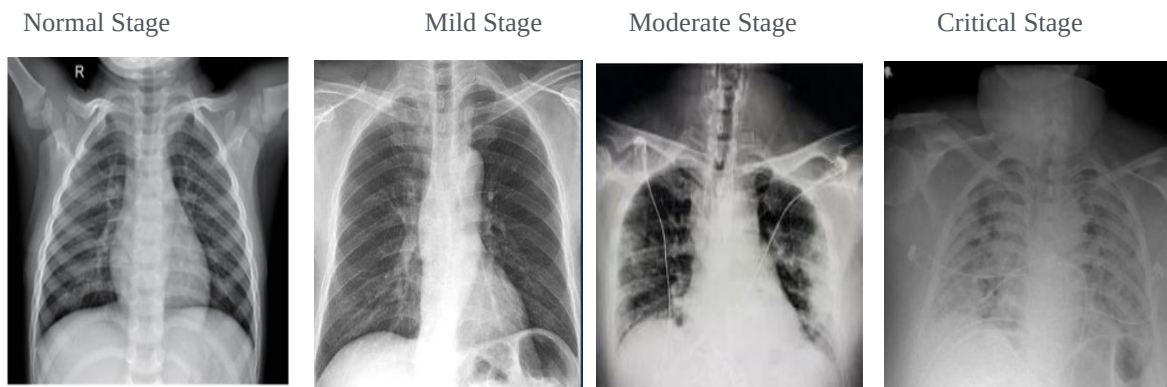


Figure -7 Covid-19 stages

finally conclude depending nature of the virus we can treat it differently. So through this we can easily find out which type of virus it is, its spread level and vulnerability. Due to this it becomes easier to cure the patient.



It is important to rule which type of covid 19 virus the virus is because it may contain some normal effect covid 19 viruses. The Next stage monitoring the spread of the virus is important. Each of its levels and vulnerability can be detected by feeding the scan images data into our modified deep learning algorithm. With accurate results only knowing the covid 19 virus makes treatment easier and better results. A mild case like a normal type of virus. In this we must give importance to stages severe and critical stages. Because these stages cause damage to our organs. Its effects are life threatening damages occur. So, it is important to find version of this.

Illness severity can vary the following effects

- Mild: No Symptoms, mild coughing and fever
- Severe: 50% lung involvement
- Critical: respiratory failure, shock, multi organ failure

Results & Discussion

By using these types of methods, we can easily eliminate virus and its cells and treat it. this type of operation is simple and easy to solve. Deep learning algorithm are the method we go through in these operations. Deep learning algorithm are divided into several categories. In this we use Feedforward Neural Networks and deep belief network, multiple layers of perceptions algorithms. The Methods used in these algorithms can be used to determine the results using hidden layer and functions.

The results obtained using this algorithm are compared to the results obtained using another existing algorithm. The results obtained using these methods are consistent and best

TECHNIQUES	ACCURACY (%)	ERROR (%)
FNN	0.81	9
MLP	0.92	8
MACO-CNN	0.91	8
MDLA	0.95	5

Table-1 Covid-19 identification status comparison

This implementation is superior in its nature when compared to another existing algorithm. Using these functions, we have a high percentage of its detection. These activities have decreased the percentage of errors

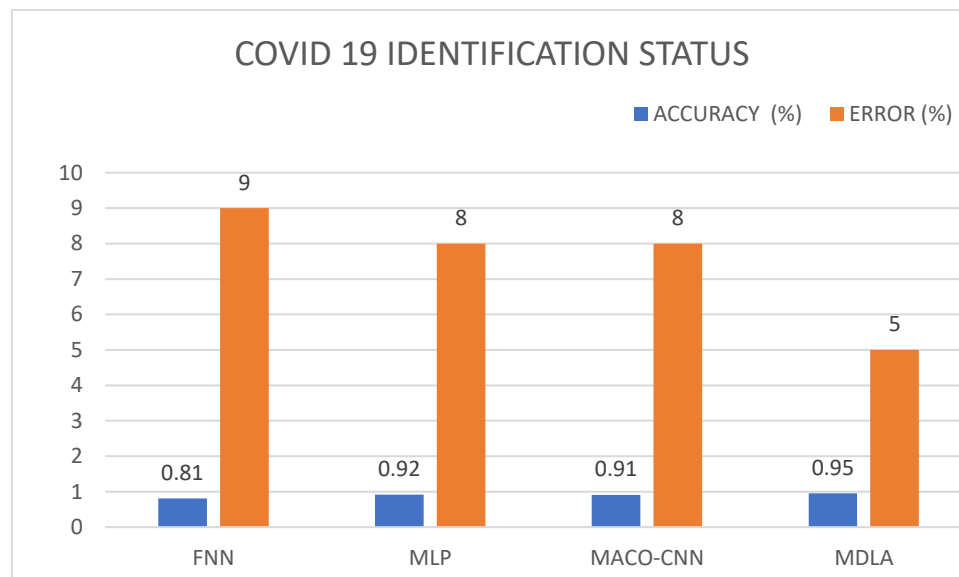


Figure-8 Comparison of multiple algorithms

Conclusion

The number of people diagnosed with Covid 19 disease is increasing day by day. Finding opportunities to stop and simplify this version important. A modified deep learning algorithm is the method found to prevent this. Not only that, its results are also better compared to others. So, using these functions you can find the Covid 19 disease status easily. So, we consider these activities as the best activities to finding Covid 19. The algorithm we use is used in many ways to monitor the patient's condition and provide the necessary treatment. This algorithm is very useful for better treatment and more accurate measurement of patient health changes.

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