

COVID-19 USING COGNOS

ABSTRACT :

The Covid-19 pandemic has shaken the world completely. No one knew what was coming and everyone was running helter-skelter. The governments were paralyzed and the infrastructure required to deal with this problem was absent completely. The genome sequence was out. But what the disease entailed and what it will lead out was just anyone's imagination. Till today as we write there are multiple dimensions of it that lay unexplored and need a deep exploration to be found out. Our Project seeks to uncover the mystery using the application of data sciences to solve it. We seek to use data sciences to help authorities and also to give the medical field the insight that data can provide to them to deal with the pandemic better. Data science is the application of data science algorithms and machine learning to train the models to find patterns. Patterns reveal what the common issues are and common symptoms and everything that is common comes out in a visual representation. It's these representations which make complex things easy and digestible to people from non tech backgrounds.

Use of data science in such a pandemic will lead to greater insights in the data we are working on. A huge dataset of people suffering from Corona virus to give us better ways of fighting the pandemic. Data-sciences in our project is being applied to just the Corona virus but its applications are wide ranging and can be applied across sectors of diseases to diagnose better. In-fact data science is the new method of diagnostic and can lead to even better cure for diseases. It's this frontier we seek to find from our project.

1.INTRODUCTION:

Covid-19 cases are increasing day by day in and all over the world, millions of people are dying and the economy is experiencing free-fall. It has been spreading like water in the open ocean and it seems like there is no stopping it, But thankfully since the inception of this epidemic many countries have properly managed the databases of each and every patient and their health history. We today have advanced computational infrastructure and data science algorithms through which we can analyse these data sets and gain insight-full information so that we can help the society. People have proposed many interesting models and trend prediction methods. The project will help us in recognizing the insights that will be gained by using data science algorithms on the data, these insights will help us in identifying and giving an idea of how the number of covid cases are impacted as possibility of being diagnosed positive on the basis of the symptoms .

2.LITERATURE SURVEY:

According to the research paper [1], the authors, R. Wang, G. Hu, C. Jiang, H. Lu and Y. Zhang, have compared the prediction of patterns by using 3 methods and comparing their

graphs with each other. These models are the conventional logical regression model, the Particle Swarm Optimization SIR model and the Lowest Square approach SIR model. The chart ultimately shows some patients with a novel form of X-axis coronary pneumonia, and Y-axis date. By seeing the three patterns we come to know that the data is plotted in the form of a curve.

“The public figures of daily updated confirmed instances of Covid-19 from University John Hopkins were analysed in this study article [2] proposed by V.Z.Marmarelis.[2]. RM as described by Riccati Equation, is the main modelling element for the method. The public figures of daily updated confirmed instances of Covid-19 from University John Hopkins were analysed in this study article [2] proposed by V.Z.Marmarelis et al. [2]. RM, as described by Riccati Equation, is the main modelling element for the method. Further by applying the equation we find 5 different parameters and their dependence on the no. of cases increasing day by day”.

Everyone analysed knowledge on coronary disease and sustainable therapy utilising research articles from Gerry Wolfe*, Ashraf elnashar*, Will Schreiber* Izzat Alsmadi*. " Guided by COVID-19 Literary Clustering of the Datasets from Kaggle based on COVID-19. [3] The data were further divided into four: (1) Mobility social distances, (2) Health and COVID; (3) Economic impact; and (4) Vulnerable population, and were utilised in a second dataset from MTI. The document has been analysed and text has been processed in order to produce tokens for clustering and the use of the K-Median method to label data to assist extract and analyse categorised data.

According to Tuli,[4] the epidemic may be tracked extremely efficiently via Shrestha et al Machine Learning (ML) and Cloud Computing, anticipate an outbreak of the illness, and create appropriate policies to regulate its expansion. Then given the array, face extraction and collection is done. They have proposed a Machine Learning model that can be run continuously on Cloud Data Centers (CDCs) for accurate spread prediction and proactive development of strategic response by the government and citizens. The dataset used by them in this case study, World in Data by Hannah Ritchie. They have also used a cloud framework and azure instances for real time analysis of data.

The research paper [5] Francisco

Nauber, Bernardo Gois et al. have emphasised the rising popularity of epidemic behaviour prediction research due to their capacity to anticipate the natural course of viruses. This study presents several predictor approaches with machine training, logistic regression, filters, and epidemiological models in order to explain COVID-19's behaviour.

The research paper [6], the authors Yazeed Zoabi, Shira Deri-Rozov and Noam Shomron have acknowledged that accurate SARS-CoV-2 screening allows for fast and efficient COVID-19 diagnosis and reduces the strain on health care systems. Prediction models using many characteristics have been created to assess the likelihood of infection. The model projected 0.90 auROC in the forward-looking test set (area under the receiver operating characteristic curve).

The research paper [7], authors Enis Karaarslan and Doğan Aydın mentioned that the incident at COVID-19 showed that the world was unwilling to disseminate the virus so rapidly. One crucial factor in mitigating the detrimental impacts of an epidemic or pandemic is the effective use of information technology. They suggested a management epidemic system (EMS), which relies on the unfettered and timely flow of information between states and organisations. They have been using an MPISA paradigm, which allows different platforms to be integrated and gives the solution for issues of scalability and interoperability.

[8] This paper Describes the use of a new epidemiological compartment-based model for the estimation of the propagation of the coronavirus COVID-19, that is, SEIAR (Susceptible Exposed Asymptomatic Infectious Recovered). This is accomplished through the heuristic approach of differential evolution. In this way the day(s) when that number reaches its maximum, the associated value and the future evolution of its spread may be evaluated in approximate order for different situations.

The [9] authors Ayyoubzadeh S et al have Used computerised data mining technologies for improved insights on the outbreak of COVID-19 in each country and globally for the management of the health catastrophe. Google Trends website collected data. For estimating the number of positive COVID-19 instances, linear regression and long-term memory (LSTM) models were utilised.

[10] The study document [7] by Amir-Sardar Kwekha Rashid, Heam N Abduljabbar and Bilal Alhayani shows that in COVID-19 research, hypotheses may be proved to be deterministic, transforming into clear findings and predictions. The outcomes of supervised learning algorithms are better than those of 92.9% of uncontrolled learning algorithms. The assistance for the development of standard diagnostic procedures like IgM, IgG, X-ray chest, CT-scans and RT-PCR can be seen as an artificial intelligence and deep learning. The CNN Algorithms selected to perform this study are MobileNet, DenseNet, Xception, ResNet, InceptionV3, InceptionResNetV2, VGGNet, NASNet.