



COVID-19 IMPACT ANALYSIS

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ABSTRACT

An Analysis of the Economic Impact of the Covid-19 Pandemic in India. Even before the pandemic, the Indian economy had seen a slowdown in economic growth and a record rise in unemployment and poverty. Thus, when the pandemic hit in March 2020, India's capacity to deal with a new crisis was weak. The economic crisis after March 2020 affected all sectors of the Indian economy. In agriculture, farmers faced broken supply chains, lack of market outlets, weak demand and declining produce prices. In industry, micro and small enterprises were the most affected. At least 15 million jobs were lost due to the crisis. Using the input-output (I-O) framework, and create four scenarios of damage to the Indian economy. India's GDP growth rate could range from -4.3% to -15% in 2020-2021. As of October 2020, the government's economic response was severely deficient on demand-side interventions. The government was reluctant to increase budgetary expenditure as it feared a widening of the fiscal deficit. Given this fiscal stance of policy, the prospects for an early revival in the Indian economy look bleak.

Keywords: Covid-19, GDP, Data analysis, Data Visualisation.

1. Introduction

Data Mining

At the intersection of informatics and statistics, field mining ("Knowledge Discovery in Databases" or KDD) is an analytical step that attempts to find patterns in large data sets. Using techniques at the intersection of artificial intelligence, machine learning, statistics, and database systems. The goal of the entire data mining process is to extract information from the data set and transform it into an understandable structure for use beyond the raw analysis step. , including aspects of database and information management, data preprocessing, model and inference consideration, interest metrics, complexity consideration, open structure processing, visualization, and online updating. In general, data mining (sometimes called data or knowledge mining) is the process of analyzing data from different perspectives and gathering useful information—information that can be used to increase revenue, reduce costs, or both. Data mining software is one of several analytical tools for analyzing data. This allows users to analyze data from different dimensions or angles, classify and summarize certain relationships. Technically, data mining is the process of finding relationships or patterns among dozens of fields in a large relational database.

Figure 1.1: Data mining process

Data

Data is any fact, figure, or text that can be processed by a computer. Organizations today collect large and growing amounts of data in various formats and databases. This includes:

- Operational or operational data such as sales, costs, inventory, payroll and accounting
- Non-operational data such as industrial sales, forecast data and macroeconomic data
- Metadata - information about the data itself, such as logical database design or data dictionary definitions

Information

Patterns, associations, or relationships between these data can provide information. For example, a point-of-sale analysis of a retail store can provide information about what products are sold and when.

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Education

Data can be converted into knowledge about historical patterns and future trends. For example, retail supermarket sales summary data can be analyzed based on advertising efforts to educate consumers about purchasing. Thus, the manufacturer or retailer can determine which products are most likely to be advertised.

Database

In computing, a data warehouse (DW or DWH) is a database used for data reporting and analysis. It is a central repository of information created by combining information from many different sources. The data warehouse stores current and historical data and is typically used to generate trend reports for high-level management reporting, such as annual and quarterly comparisons. The data stored in the warehouse is loaded from the operational system (eg marketing, sales, etc. shown on the right). Data can go through the application data store for further processing before being used in DW for reporting. A typical ETL-based data warehouse uses staging, integration, and input layers to accommodate its core functionality. The scene layer, or scene database, stores raw data from each different source data system. The integration layer integrates different data sets by transforming the data from the scene layer, storing this transformed data in the application data store (ODS) database. The integrated data is then transferred to another database called the database database, where the data is often organized into hierarchical groups called metrics and facts and summary facts.

Data warehouses built from integrated data source systems do not require ETL, databases, or application data warehouse databases. An integrated data source system can be considered part of the data store layer of a distributed application. Data federation techniques or data virtualization techniques can be used to collect and integrate data directly into warehouse database tables in a distributed integrated data system. Unlike ETL-based data warehouses, integrated source data systems and integrated data warehouses are due to dimensional or data transformations. This integrated data warehouse architecture supports drilling operations from the general data warehouse to the transactional data of the integrated source data system.

The database can be divided into databases. Stores a set of data in a database. This data warehouse definition focuses on data storage. The main sources of data are cleaned, transformed, cataloged and made available by managers and other business professionals for use in data mining, online analytical processing, market research and decision support, however.

2. Literature survey

2.1.MACHINE LEARNING-BASED PREDICTION OF COVID-19 DIAGNOSIS BASED ON SYMPTOMS

AUTHOR : YAZEED ZOAB

Effective screening of SARS-CoV-2 enables quick and efficient diagnosis of COVID-19 and can mitigate the burden on healthcare systems. Prediction models that combine several features to estimate the risk of infection have been developed. These aim to assist medical staff worldwide in triaging patients, especially in the context of limited healthcare resources. We established a machinelearning approach that trained on records from 51,831 tested individuals (of whom 4769 were confirmed to have COVID-19). The test set contained data from the subsequent week (47,401 tested individuals of whom 3624 were confirmed to have COVID-19). Our model predicted COVID-19 test results with high accuracy using only eight binary features: sex, age ≥ 60 years, known contact with an infected individual, and the appearance of five initial clinical symptoms. Overall, based on the nationwide data publicly reported by the Israeli Ministry of Health, we developed a model that detects COVID-19 cases by simple features accessed by asking basic questions. Our framework can be used, among other considerations, to prioritize testing for COVID-19 when testing resources are limited.

2.2.IMPACT OF COVID-19 ON GDP OF MAJOR ECONOMIES: APPLICATION OF THE ARTIFICIAL NEURAL NETWORK FORECASTER

AUTHOR : PRADYOT RANJAN JENA

The ongoing COVID-19 pandemic has caused global health impacts, and governments have restricted movements to a certain extent. Such restrictions have led to disruptions in economic activities. In this paper, the GDP figures for the April–June quarter of 2020 for eight countries, namely, the United States, Mexico, Germany, Italy, Spain, France, India, and Japan, are forecasted. Considering that artificial neural network models have higher forecasting accuracy than statistical methods, a multilayer artificial neural network model is developed in this paper. This model splits the dataset into two parts: the first with 80% of the observations and the second with 20%. The model then uses the first part to optimize the forecasting accuracy and then applies the optimized parameters to the second part of the dataset to assess the model performance. A forecasting error of less than 2% is achieved by the model during the testing procedure. The forecasted GDP figures show that the April–June quarter of the current year experienced sharp declines in GDP for all countries. Moreover, the annualized GDP growth is expected to reach double-digit negative growth rates. Such alarming prospects require urgent rescue actions by governments.

3. Existing System

In December 2019, the Corona Virus (COVID-19) outbreak had a devastating impact on this system. The impact of the coronavirus outbreak has affected not only economic activity but also human life. There are rapid advances in machine learning techniques for analyzing medical data. Hence, predictive analysis is done using various algorithms to show the impact of Covid on various economic parameters. This article aims to assess the overall impact of COVID-19 on the Indian economy through the digital economy. Statistics are collected from reliable sources to determine the impact of Covid on the Indian economy. With this, the actual difference between an asper number and a real number can be determined and taken as a future reference. In this work, a hybrid of L1 regression and tree-based algorithms contribute to optimized segmentation. Then, KNN is used to classify target values.

Disadvantages

- Produce a low level of accuracy

- It takes more time to learn

Recommended system

To propose an intelligent algorithm for economic forecasting that uses Convolutional Neural Networks (CNN) to achieve goals. Our work estimates the correlation coefficient based on the spear method between gross domestic product (GDPR) and other economic statistics to find effective parameters for the growth and decline of GDPR, and also determine the returns from CNNs. To assess the effectiveness of the algorithm in predicting economic status, we studied nationally reported economic and disease statistics in India. Test results show about 96% and 89% accuracy about one and a few months ago. Our method can help governments propose effective policies to prevent economic damage.

Benefits

- Easy to predict GDP with high accuracy
- It is also time efficiency.

4. System Architecture

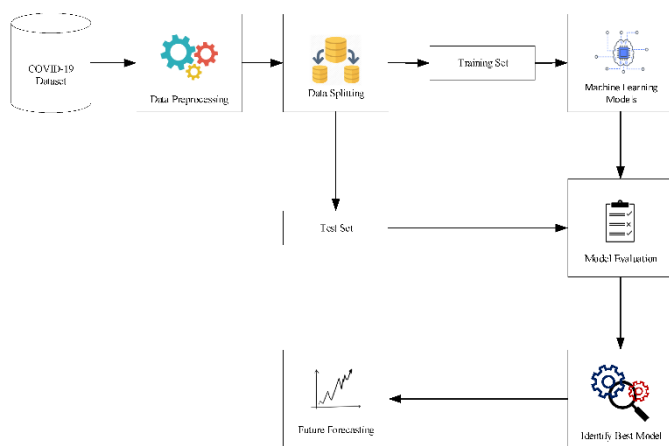


Fig. Architecture diagram of System

MODEL	ACCURACY
SVM	81.9%
Random Forest	75.4%
Decision Tree	78.6%
Logistic Regression	81.9%

Table. Accuracy after Testing modules

This project will affect everyone connected to the Internet, reducing exposure and reducing mortality. It will inform the user about the current situation through statistical methods and data visualization. This will help end users to understand properly and take appropriate precautions against Covid-19. Applying data science to such pandemics will lead to greater insights into the data we work with. A large dataset of people infected with the Corona virus to inform better ways to fight the pandemic. The data science in our project is only applied to the Corona virus, but its application is broad and can be used in various fields of diseases for better diagnosis. In fact, data science is a new way to diagnose and can lead to better disease management. This is the limit we want to find in this project.

5. Objectives

- To analyze the Covid-19 Data Set
- To provide a visualized study of analyzed data using Data Visualization
- To obtain the effect of Covid-19 on the GDP of a country
- To provide public access to the public to prepare for preventive measures

Acknowledgements

We would like to express our deep and sincere gratitude to professor Ms.H.Swathi,M.E., for giving the opportunity and guidance throughout this research.

Conclusion

The researchers identified the economic crisis as the main problem for the government and human life, stating the current threat to the world with the epidemic of COVID-19. Several studies have analyzed the negative impact of disease epidemics and prove the important role of the economic status and infrastructure of the country against viral infections and other critical situations, which consists of guaranteeing human health through the use of effective policies. For example, the importance of forecasting in crisis management has been demonstrated by anticipating the next peak of virus transmission and recommending preventive measures (such as zoning) that could lead to economic collapse. This paper proposes a forecasting method to check the GDP level of countries one or several months before facing an outbreak of diseases and other dangerous viruses. This work found the dependence between the

level of GDP and other economic parameters, the disease was evaluated by providing an intelligent algorithm for new cases and the state of the country's economy.

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