ANALYSING STATE-WISE COVID-19 DATA TO ELIMINATE HEALTH DISPARITIES

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Abstract:

- COVID-19 has had a significant impact on people's lives all around the world
- Rural locations (despite their low population density) may be especially prone to poor COVID-19 outcomes.
- In this project, we gathered and organised many publications on covid-19.
- Utilised machine learning techniques to do a comparative analysis using ML to identify state-by-state death rates.
- Provided the best ML algorithm for classifying the dataset.

Introduction:

- COVID-19 pandemic is a watershed point in global history
- Second COVID-19 wave in India would be significantly more severe than the first.
- While the number of active cases has decreased in major cities, the epidemic is rapidly spreading across rural areas
- India is being swept by a devastating COVID-19 outbreak
- Forecasting the number of deaths and new cases that are likely to increase, decrease, or remain constant in the future.

Objective:

- The major goal of this study is to analyse Covid-19 state-by-state in order to decrease health disparities in India's states.
- Using machine learning techniques and visualisation to forecast the amount of active, discharged, and death cases of Covid-19.
- Our project's projections will be able to provide individuals and the government with a comprehensive analysis of India's current predicament.

Literature review:

Author Name	Year	Paper Title	Methodology	Advantage	Disadvantage	Remarks
B. Ghosh, A. Biswas	2021	Status evaluation of provinces affected by COVID-19: qualitative assessment using fuzzy system	If-then rules are used to interpret human perceptions in MFIS. The proposed method generates an MFIS to evaluate all Indian states and UTs performance in preventing the COVID-19 pandemic.	Even though the data used in this analysis is outdated now we can input updated data and we can get accurate results in India	Although the proposed method processes the input values as fuzzy numbers it is unable to provide fuzzy outcomes	This data used in this analysis is outdated and this data is analysed only using data in India.
Binoy et al.	2021	Covid-19 pandemic and economic performances of the states in India.	Built a regression model utilising state unemployment rates as a performance indicator for the analysis of covid - 19.	We can use this analysis as a reference when making economic decisions	This analysis is the based on Current Covid Situation which is subject to change	The Outcome is based on a Computer Model.

Ashutosh et al.	2020	An epidemic model SIPHERED and its application for prediction of the spread of COVID-19 infection in India.	The SIPHERD model considers both Symptomatic and Asymptomatic infected cases, as well as illness spread by Exposed.	This model give great suggestions to reduce COVID Cases	This analysis is done without taking Vaccine into consideration	The Data Used is outdated
Saravam Mittal	2020	An Exploratory Data Analysis of COVID-19 in India.	The EDA dataset is normalised, filtered to choose essential columns, derived new columns, and graphed. Data processing and site scraping were done in Python	Gives analysis of the age-wise spread of COVID-19, in India compared to other countries. The state-wise trend of the epidemic and to analyse the Indian healthcare sector.	This method may not be accurate as we can see the COVID situation is rapidly changing.	Vaccine is not taken into consideration of the Outcome
Ramjeet Singh	2020	Data analysis of COVID-19 epidemic using machine learning methods: a case study of India	Indian COVID-2019 outbreak datasets were analysed using six regression analysis based machine learning models.	We can use this method if vaccine can't prevent infection	The Prediction of this model is not accurate	In this analysis, the Lock-down effect on COVID is ignored so we can't rely on the outcome of this paper

Research gap:

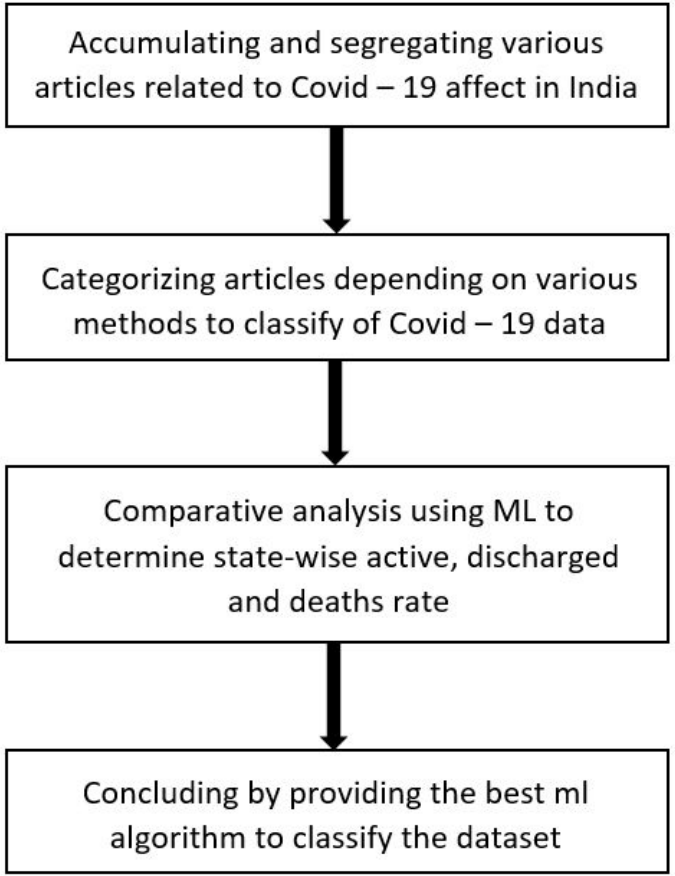
- The COVID-19 pandemic disrupted supply chains and brought economies around the world to a standstill.
- Decision-making processes need to be improved as day by day we are getting to know about new variants of this covid.
- Disease control should continue to be prioritized to reduce the risk of their emergence and plan in place to mitigate their impact.
- We are able to understand and find the states where this virus had attacked severely
- This is particularly true for low-and-middle-income states which are highly underrepresented in the literature, yet are more adversely affected. So, the framework might be useful in order to control and get notified in future.

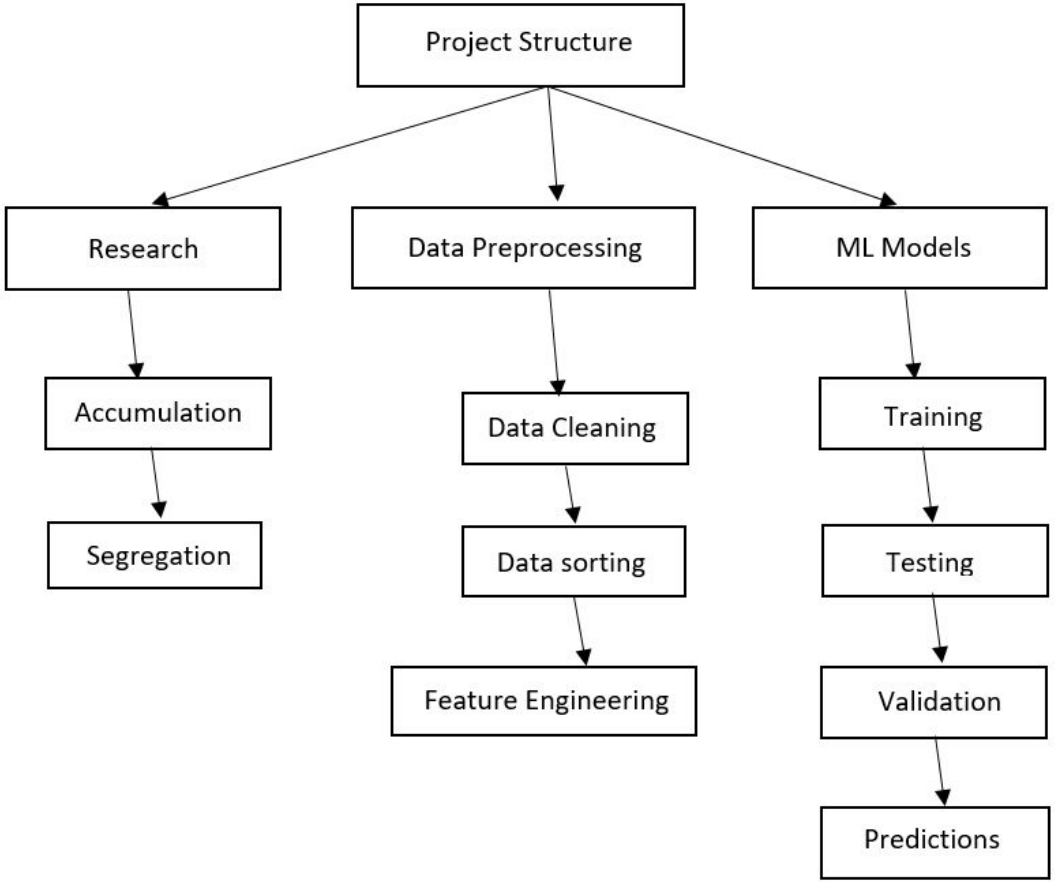
Proposed idea:

We hope to reach three conclusions with our effort:

- Prediction of active, discharged, and death rates due to Covid-19 by state.
- Find the most effective machine learning method to classify the dataset.
- Visual representation of data so people can comprehend clearly and use our results for evidence-based communication and actions

Flowchart Representation:




Project Structure
Research
Data Preprocessing
ML Models
Accumulation
Segregation
Data Cleaning
Data sorting
Feature Engineering
Training
Testing
Validation
Predictions