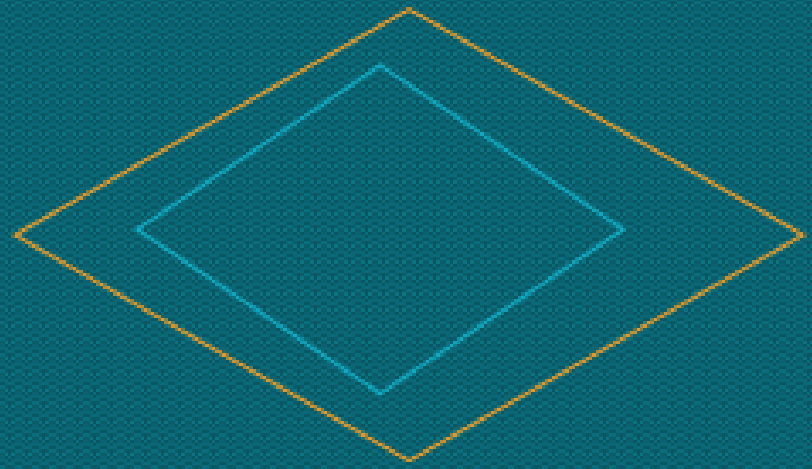

COVID-19 Ethiopia Timeseries data analysis and forecasting

Introduction

- **COVID-19**
  - ✓ Coronavirus disease has widely spread all over the world since the beginning of 2020
- **Ethiopia**
  - ✓ Largest populous country in Africa next to Nigeria with limited healthcare facilities
- **Data analysis techniques**
  - ✓ Various ds and ml tools such as Pandas, NumPy, Scikit Learn and satatsModels.
- **Timeseries data**
  - ✓ A time-stamped dataset is sequence of data points indexed in time order
- **Forecasting models**
  - ✓ ARIMA, regression models, and sequential deep learning models

Motivation

- Its remembered that, following Covid-19 pandemic schools and other government and private organizations has been forced to stop their regular activities.
- In Africa, mainly in Ethiopia available healthcare infostructures are limited in proportion to available population size
- Most of the organizations has no culture of building informative datasets; thus making decisions and planning is done without evidence.
- Allocating resources and planning to create the new normal is difficult due lack of proper projections of the COVID-19 cases, recovery and death rate.
- From my previous research experience I am passionate about building, extracting, and manipulating timeseries data in structured and unstructured format.
- To do so, this project has been proposed to tackle all the points above

Main features of the project

- Timeseries dataset construction from the scratch
- Data munging and wrangling
- Explanatory data analysis
- Forecasting the rate of cases, recovery and deaths

Significance of the project

- This project mainly helps government offices to allocate resources and make plans to create the new normal during and after COVID-19 pandemic
- Develop culture of building informative datasets and making decisions based on evidence or actual experience in Ethiopia.
- Moreover, it helps the scientific community to make comparison between other countries and deduce conclusion or to draw other relevant hypothesis.

Target customers of the project

- Direct beneficiaries/stakeholders
  - Ministry of Health in Ethiopia, public health institute in Ethiopia
  - Healthcare organizations(Hospitals, clinics, Medical Laboratories)
- Indirect beneficiaries
  - Other government and private offices in Ethiopia

Challenges and opportunities

- ***Challenges***
  - Premature dataset for this particular task to apply other sequential models such as LSTM networks.
  - Since the dataset is collected from Ethiopia ministry of health daily reports; whenever the internet has disconnected we suffer to collect because of lack of willingness and collaboration from stakeholders.
- ***Opportunities***
  - Easily understandable domains to get insight and interpretation about the dataset without the help of domain experts or third party requests.
  - The government will utilize the final result of this project to made a change for policy design for similar incidents

KPI of the project

- Interactive user interface for end users
- Easily understandable and interpretable visualization tools and techniques
- The future is not yet known, that is why we entertain based on our previous experience or evidence of data; thus, whenever the estimation is not deviating in certain extent from the actual circumstance will be considered as KPI’s.