TEXT SUMMARIZER

PROJECT GUIDE PROF. ANISH ABRAHAM

Project idea presented by:
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Poornima Nair T
Muhammed Sabik K
Sree Kumar Harith Nair

Introduction

- A summary of an article is a shortened version containing key points in order to condense it into few points and to do so in words used in the article itself.

- There are many reasons and uses for a summary of a larger document, from shortening a lengthy news article to simplifying a complicated study material, a text summarizer is an efficient and useful tool to all target audiences.

Implementation

Implement Pretrained BERT, TextRank Models and obtain summaries

Evaluate the ROUGUE values for obtained summaries

Sample summaries and Rouge Scores

Sample_text=India's current COVID-19 surge is an unprecedented public health crisis. With exponential growth in the number of daily COVID-19 cases since March, 2021, India reported more than 400 000 new cases daily on May 1, 2021.This number is likely to be an underestimate of the true burden of COVID-19 cases, given reports of backlogs of test results, poor access to testing, and many people not getting tested due to fear and stigma.Without mitigation, estimates suggest India could reach more than 1 million COVID-19 cases per day with over 1 million cumulative COVID-19 deaths by Aug 1, 2021.The Indian Government and health authorities must act fast to flatten this second wave. We strongly endorse the national action plan laid out by The Lancet COVID-19 Commission India Task Force and we have summarised some of their recommendations in the panel.Early in the pandemic, India provided COVID-19 vaccines and medications to other countries. Now it is time for the global community to support India as it endures its own public health crisis. As a group of clinicians, public health professionals, and scientists working in India or with research and clinical collaborators in India, we call for eight steps the international community must take to help address the crisis in India.

First, the most urgent need is to save lives by expanding health-care capacity. India needs donations of oxygen concentrators, ventilators, medications, vaccines, high-quality personal protective equipment, and SARS-CoV-2 rapid diagnostic tests.The international community can help support the public and private sectors with the scale-up of in-country oxygen production and importation of supplies needed to transport oxygen and medical supplies over large geographical areas. To expand home-based care when appropriate and promote self-isolation, international partners can collaborate with local organisations to ensure that communities, particularly vulnerable rural and slum populations, have access to pulse oximeters, supplies for risk mitigation such as high-quality masks, economic provisions, and food rations.

Second, global partners must support expanded access to COVID-19 vaccines in India. India's shortage in vaccine supply is projected to last until July, 2021.The Serum Institute of India is a major contributor to COVAX, and India's current crisis has forced the country to prioritise vaccinating Indian citizens over supplying COVAX with vaccines.This shift will likely delay vaccines reaching other low-income and middle-income countries. The international community should release its surplus COVID-19 vaccine stockpiles to India and other countries that are facing COVID-19 surges. Additionally, high-income countries (HICs) must waive intellectual property rights on COVID-19 vaccines, lift impediments to raw materials needed for vaccine manufacture, and support technology transfer to increase global vaccine manufacturing. We welcome the US Government's support for the intellectual property rights waiver on COVID-19 vaccines and ask other HICs to do the same.

Third, international partners should support the scale-up of laboratory testing and genomic sequencing of SARS-CoV-2. To identify potential hotspots early and prevent future surges, SARS-CoV-2 testing must be urgently scaled up using RDTs and pooled testing combined with innovative methods of delivery such as self-administered home-based testing or mobile outreach vans.The rise of the B.1.617 and B.1.1.7 variants of concern in India highlights the need for expanding genomic sequencing to detect the emergence of epidemiologically and clinically important SARS-CoV-2 variants.This sequencing effort requires partnerships with research agencies, academic institutions, and laboratories to expand and augment centres in India, such as the Indian SARS-CoV-2 Genomic Consortia.

Fourth, the international community can help provide technical assistance and training for people on the ground, especially for

OBSERVATIONS

It was noticed that from the rouge scores, the BERTRank model performed best when it represented only 1/4th of the whole sample text with a score of 0.497.

The table below shall show the rouge scores for different representation percentages:

Representation % \ Model	0.5	0.33	0.25
BERT	0.730	0.567	0.441
TextRank	0.744	0.607	0.438
BERTRank	0.731	0.581	0.497

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Bert Summary:India's current COVID-19 surge is an unprecedented public health crisis. This number is likely to be an underestimate of the true burden of COVID-19 cases, given reports of backlogs of test results help address the crisis in India. First, the most urgent need is to save lives by expanding health-care capacity. India's shortage in vaccine supply is projected to last until July, 2021.The Serum Institute of rces, such as oxygen canisters, oxygen concentrators, and medications, operationalising field hospitals, developing isolation and quarantine centres, improving infection prevention and control practices, and ex ecting data on post-acute sequelae of COVID-19 and reinfections should be developed to understand disease pathogenesis and support affected patients. KK receives advisory board personal fees from GlaxoSmithKlin

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This sequencing effort requires partnerships with research agencies, academic institutions, and laboratories to expand and augment centres in India, such as the Indian SARS-CoV-2 Genomic Consortia.
Fourth, the international community can help provide technical assistance and training for people on the ground, especially for non-physician health-care providers to triage, administer testing, care for patien
With telemedicine and telementoring expertise gained during the COVID-19 pandemic, international partners can support India in expanding these services to conserve human resources and decrease the pressures on
Fifth, international agencies can work with state and local partners in India to assist with the logistics of securing and transporting resources, such as oxygen canisters, oxygen concentrators, and medications
International corporations and non-governmental organisations should work with local industry to boost manufacturing of high-quality PPE, medications, oxygen cylinders and concentrators, RDTs, and COVID-19 vacc
Humanitarian agencies should send medical staff to India to support and assist with medical care.
The Indian Government needs to enable temporary licensing of international health-care personnel from recognised medical institutions so that they can provide medical care and telemedicine to support clinicians
The global supply chain for these medications is likely to be disrupted by the crisis in India.The international community must step in to fill the gaps and ensure that global supply chains of medications are n
Strengthening of surveillance systems, travel restrictions, and mandatory travel quarantine for individuals returning from India must be implemented to help control the spread of SARS-CoV-2 to neighbouring coun
Finally, global political leaders must work with India to deliberate on and initiate stricter, science-guided mitigation measures to curb the spread of SARS-CoV-2 and call for accurate reporting of COVID-19 cas

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Without mitigation, estimates suggest India could reach more than 1 million COVID-19 cases per day with over 1 million cumulative COVID-19 deaths by Aug 1, 2021.
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Historical and current mortality data, sequencing data, and granular data on COVID-19-related severity at different timepoints are essential to understand the transmission and clinical dynamics of the virus in

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EXPLORER

MY_DJANGO_APP

- application
  - __pycache__
  - migrations
  - templates \ application
    - index.html
  - __init__.py
  - admin.py
  - apps.py
  - forms.py
  - models.py
  - tests.py
  - views.py
- my_django_app
  - __pycache__
  - __init__.py
  - asgi.py
  - settings.py
  - urls.py
  - wsgi.py
- db.sqlite3
- manage.py

OUTLINE

views.py | urls.py

application > views.py

```python
from django.shortcuts import render
#import torch
from summarizer import Summarizer
import summa

# Create your views here.
def application(request):
    return render(request,"application/index.html")

def summarize1(request):
    content=request.POST.get('content')


    def bertRank(content):
        model=Summarizer('distilbert-base-uncased')
        resp=model(content,ratio=0.5)
        return(summa.summarizer.summarize(resp,ratio=0.5))

    summary=bertRank(content)
    context={
        "result":summary
    }
    return render(request,"application/index.html",context)
```

THANK YOU!