MANIPAL INSTITUTE OF TECHNOLOGY
MANIPAL
A Constituent Institution of Manipal University

SMART INDIA HACKATHON 2022

EspressoByte

EspressoByte

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MEET THE TEAM

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MEET THE TEAM

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ABOUT THE TEAM

At EspressoByte, we believe in technological solutions that are built to change the world. The technology we aim to develop hopes to ease the dissemination of important information from authorities to the people.

THE PROBLEM STATEMENT

NS1230 :

An AI/ML-based solution that generates short summaries of press releases for easy and more targeted dissemination of information to the people.
Such a TLDR (Too Long, Didn't Read) software may be integrated into an app-based solution.

Ministry/ Organization Name:

Policy Planning Cell, Ministry of Information & Broadcasting

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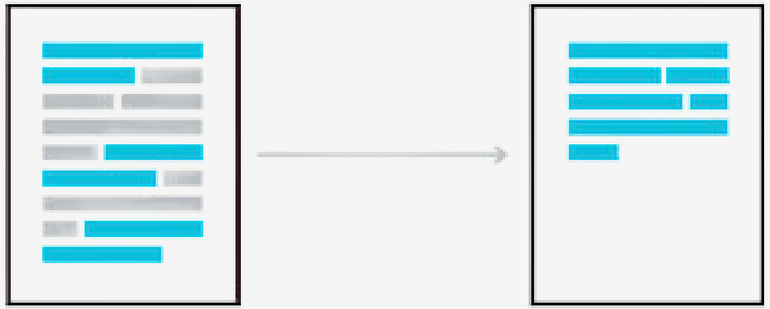
THE PURPOSE

Research shows that people's attention spans are decreasing, with many people losing interest in reading long articles.
Despite the fact that press releases contain important information, few people read them these days.
We feel that a TLDR tool that summarizes the information circulated by the Government of India is the need of the hour.

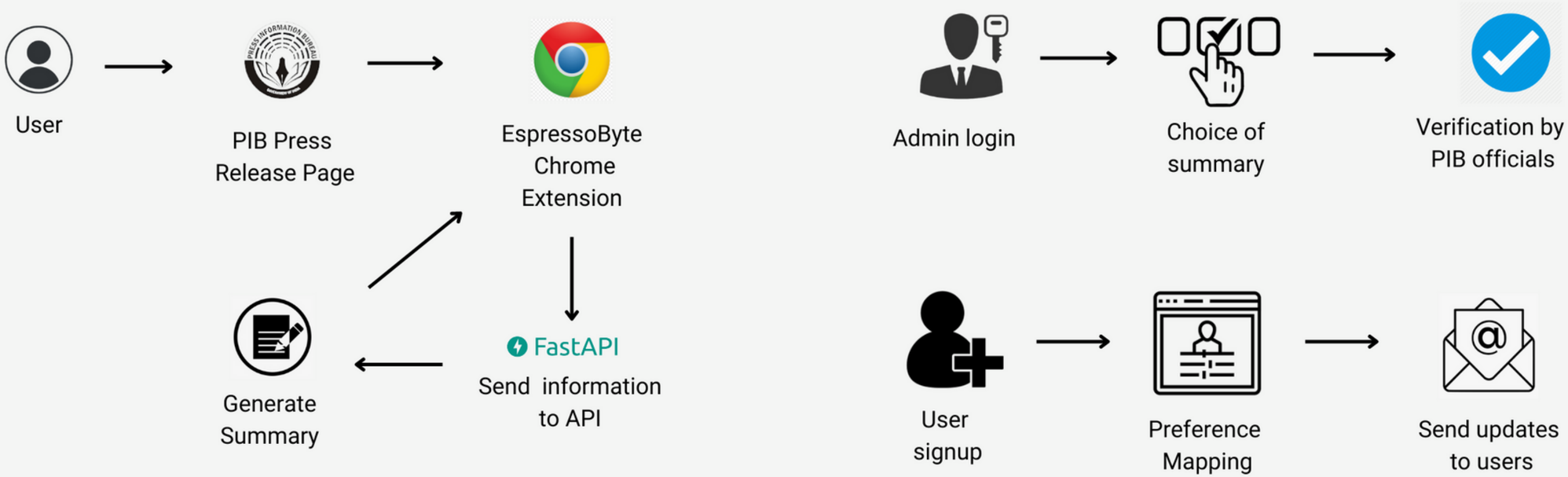


IDEA SYNOPSIS

A Chrome Extension to provide summarized press releases to the public:

The EspressoByte extension summarizes news articles and press releases based on selected text.
The summaries can be viewed in most regional languages of India.
The summaries are verified by PIB Officials.

WORK FLOWCHART



TECHNOLOGY STACK

Machine Learning:

- Python
- Tensorflow, Keras
- FastAPI, Heroku

Web Development:

- ReactJS, NodeJS
- HTML, CSS
- Manifest

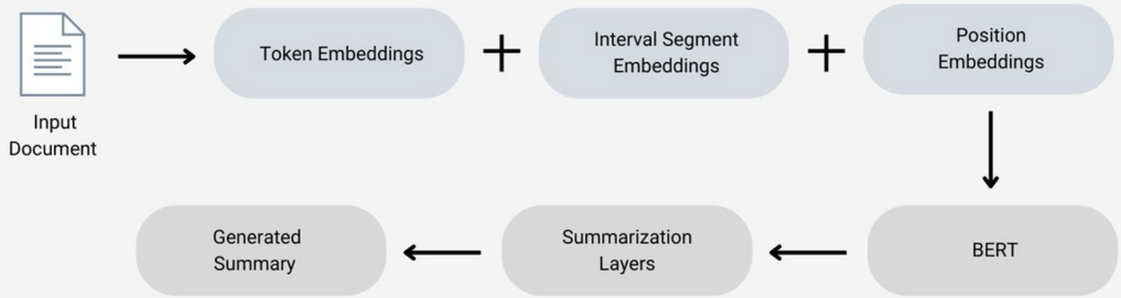
Commercialization:

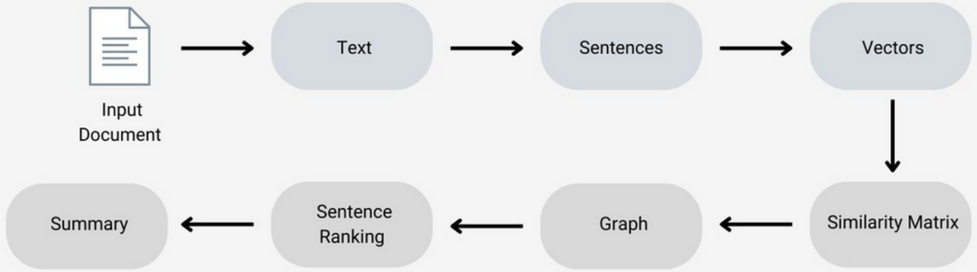
- Toolio API
- AWS
- MongoDB

ML MODEL

We have implemented 3 models for text summarization:

Extractive Model, Pegasus, and BART.
While training, these models are evaluated using metrics like Rouge and Bleu.
Uses FastAPI for integration and deployment on the cloud.



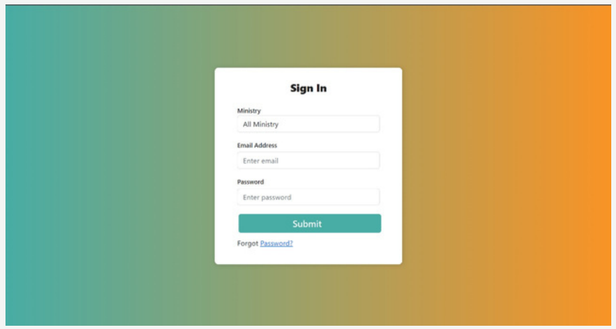


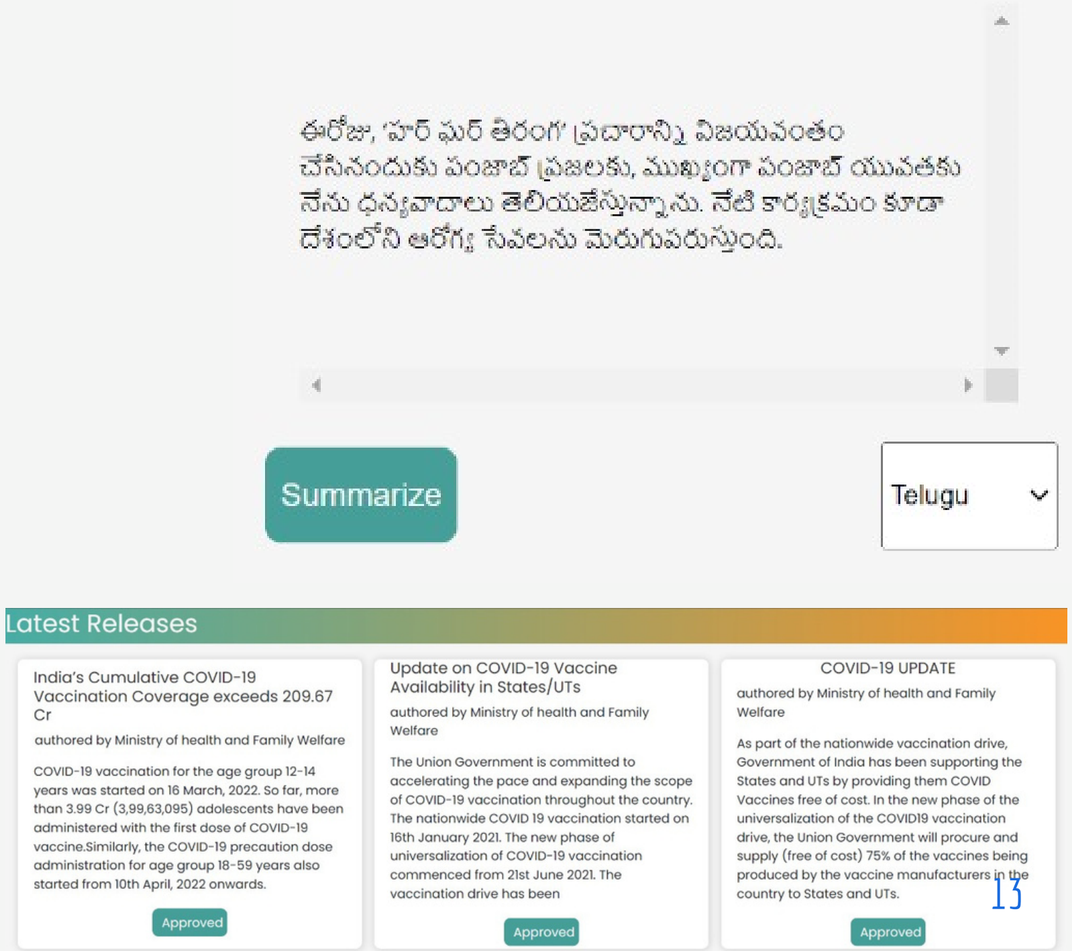
API

There are multiple API calls for sending SMS, E-Mail, and WhatsApp messages to users who have signed up.
The APIs have also been created for text-to-video and speech translation.

FRONTEND

An admin portal for PIB Officials to verify the summaries generated by ML Models.
A portal for users to choose their ministry preferences and receive updates regarding press releases.
A Chrome Extension that summarizes selected text and allows translation into the preferred language.





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COMMERCIALIZATION

The commercial application of our product is to send SMSs, WhatsApp messages, and E-mails to our subscribers based on their preferences. The customers will receive updates as per their chosen frequency.

OVERHEADS

The cost of large-scaling of the product is momentous due to high demand.
The high time complexity for a large number of users.
Increased costs due to deploying the model on a paid cloud service.

FUTURE SCOPE

Use customer segmentation and demographic clustering to send targeted content to users and subscribers.
Deploy our product on a larger cloud platform like AWS.
Send periodic updates to Ministry officials regarding product usage.

Thank You