



AI-Powered Personalized News Aggregator

PREDICTIVE ANALYTICS : User News Preference Prediction using Behavioral Analytics

TABLUEA ANALYTICS: News Consumption Trends Dashboard

PRESENTED BY :-

ANAND KUMAR (230101120292)

NITESH KUMAR (230101120209)

ABHINANDAN KUMAR (230101120229)

SAFI ALAM (230101120296)



Guidedby:- Dr. Dhawaleswar Rao



➤ Content -

- ❖ Introduction
- ❖ Dataset
- ❖ Integration with Flask Backend
- ❖ Frontend Integration
- ❖ Generative AI
- ❖ Workflow Diagram
- ❖ Dashboard
- ❖ Conclusion
- ❖ References



➤ Project Contribution-

Member

Anand Kumar

Nitesh Kumar

Abhinandan Kumar

Safi Alam

Contribution

API Development & Performance Optimization

Built the /get_news API and improved speed using caching, multithreading, and pagination

New fetching + UI Development

Fetched news from Google News, Bing News, and DuckDuckGo, and prepared the data for processing.
Developed the user interface to display the news in a clean and readable format

Summary & sentiment Analysis

Used the T5 model to generate short summaries and applied VaderSentiment to classify news as Positive, Negative, or Neutral.

Table Dashboard

News Category Dashboard



➤ Introduction

An **AI-powered Personalized News Aggregator** that collects the latest news from multiple trusted sources and delivers customized content tailored to each user's interests.

With **Generative AI integration**, the system generates short and meaningful summaries, helping users save time while staying informed. It also provides **real-time recommendations, sentiment analysis, and topic-based personalization**, ensuring that users always receive content that matches their preferences.

By leveraging **Natural Language Processing (NLP)** and **APIs**, the system ensures highly relevant, accurate, and efficient news delivery. This makes the platform not only informative but also intelligent, adaptive, and user-friendly.



➤ Dataset

❖ **Dataset Sources:**

Google Rss News , Bing News , DuckduckGo News

❖ **Domain:** News, Media, and Current Affairs

❖ **Key Features:**

- Title, Content, Source, Published Date
- Sentiment Label (Positive / Negative / Neutral)
- Category (Politics, Sports, Technology, Entertainment, etc.)

❖ **Target:** Personalized news feed generation



➤ Tools & Libraries -

- ❖ **Programming:** Python
- ❖ **Data Handling:** Pandas, NumPy
- ❖ **Visualization:** Matplotlib, Seaborn, Plotly
- ❖ **NLP Models:** HuggingFace Transformers (T5)
- ❖ **Backend Framework:** Flask
- ❖ **Frontend:** HTML, CSS, JavaScript
- ❖ **APIs:** Google RSS, Bing News , DuckduckGo News ,OpenAI GPT API



➤ Flask Backend Integration

- ❖ **Purpose:** I worked on the **Flask backend**, which connects the NLP model with the frontend so that users can get news results in **real-time**.
- ❖ **REST API Endpoints:**
 - /fetch-news → Retrieves news from internal sources
 - /summarize → Generates concise, readable summaries
 - /recommend → Delivers personalized news recommendations
- ❖ **Key Features:**
 - Real-time processing and summarization
 - Personalized feeds based on user preferences



➤ Frontend Integration

❖ Technologies Used:

- HTML, CSS, JavaScript

❖ Core Features:

- **Category-Based Filtering:** Users can select topics of interest (e.g., technology, sports, politics).
- **Search Functionality:** Custom queries allow users to find specific news.
- **Summarized Headlines Display:** AI-generated summaries presented clearly for quick reading.

❖ Backend Interaction:

- Uses **Fetch API** for seamless real-time communication with Flask.
- Enables instant display of summaries and recommendations without page reloads.



Generative Ai

➤ Role of Generative AI

❖ Capabilities:

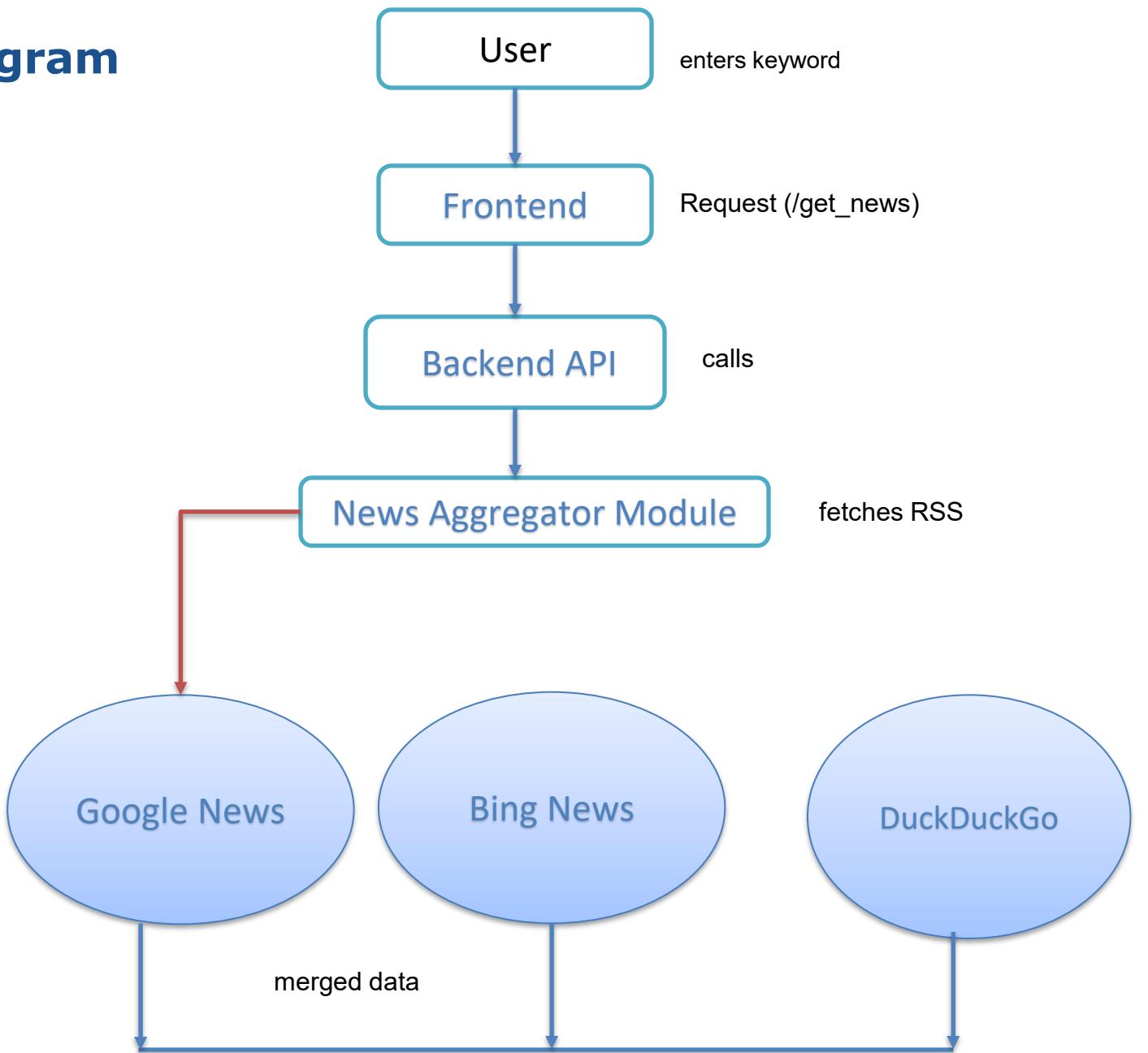
- Generates concise and readable summaries of news articles.
- Provides personalized highlights tailored to user preferences.
- Supports **multilingual summarization**, making news accessible to a broader audience.

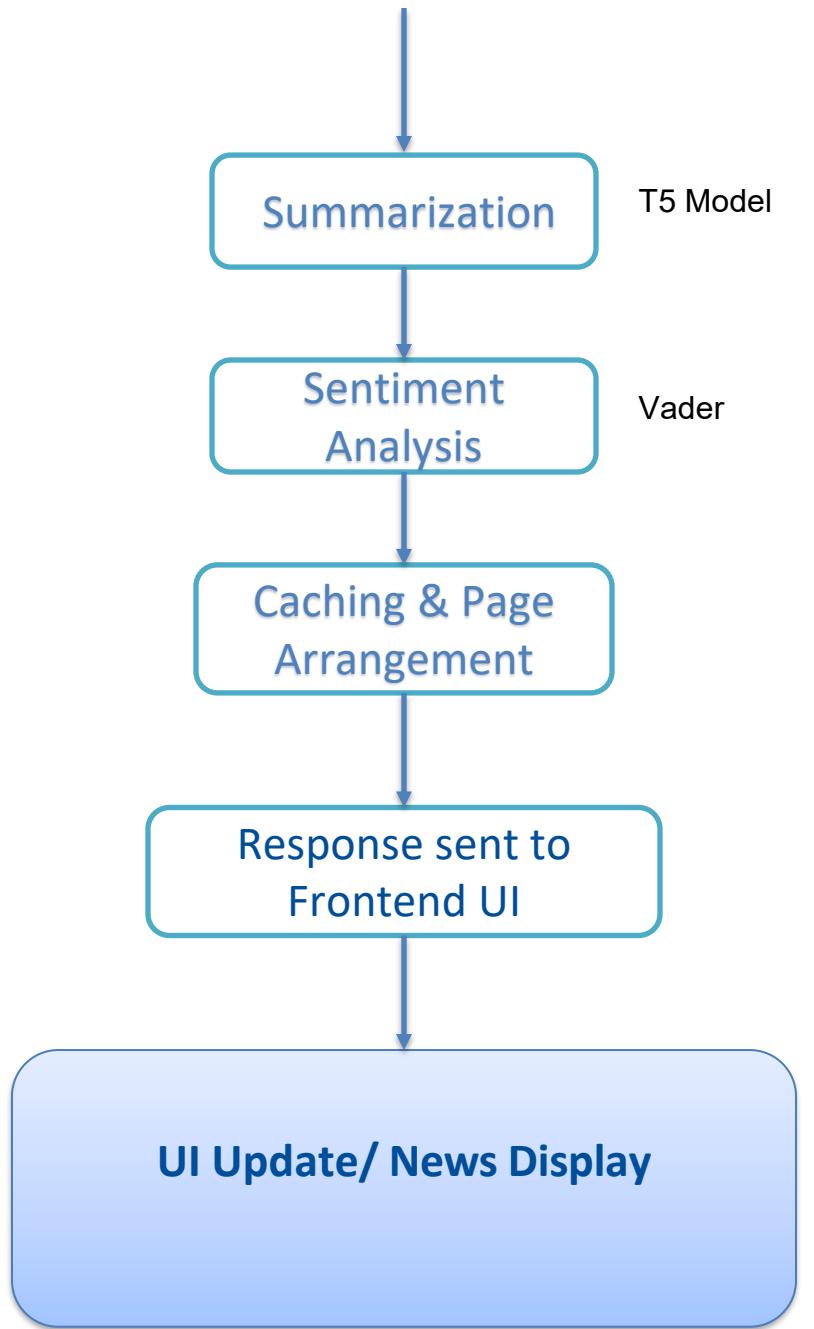
❖ How It Works:

- Receives raw news content and user preferences from backend.
- GPT-based Large Language Models (T5) analyze content.
- Generates short, meaningful summaries instantly.
- Sends summarized content back to frontend for display.



➤ Data Flow Diagram





➤ Screenshot Showcase



Not secure 10.44.191.187:5000

Dark Mode

AI-Powered News Aggregator

Technology Sports Entertainment Business Health Science Politics Travel Food Weather

Search Search news... Language English

Latest News

General Search: technology

AI on Track: How technology is transforming Indian Railways

India's Railways is embracing AI for safety, crowd management, wildlife protection.

6/9/2025, 1:19:00 pm

positive

Read More Listen Favorite Share

General Search: technology

India's first hydrogen train to mark leap in indigenous, sustainable rail technology

most existing hydrogen-powered trains globally feature engines with capacities

12/8/2025, 7:12:24 pm

neutral

Read More Listen Favorite Share

General Search: technology

IIT-M Incubated JSP Enviro launches organic wastewater treatment technology

IIT Madras start-up JSP Enviro's BEADS tech treats wastewater, cuts 80 tons CO2

10/9/2025, 8:31:00 am

negative

Read More Listen Favorite Share

Sentiment

Positive 😊 Neutral 😐 Negative 😞



Summarize ⚡ 🔎 ⭐ 🔄 ⚡

Dark Mode

AI-Powered News Aggregator

[Technology](#) [Sports](#) [Entertainment](#) [Business](#) [Health](#) [Science](#) [Politics](#) [Travel](#) [Food](#) [Weather](#)

Search

virat run machine

virat run machine

Search



Language

English

Latest News



General
Search: virat run machine

From Virat Kohli's majestic knocks to Suryakumar Yadav's belligerence – India's top five run-scorers in Asia Cup T20Is

India's young brigade all set to take the continent by storm. Here's a look at the

9/9/2025, 12:57:00 pm

positive

Read More Listen Favorite Share



General
Search: virat run machine

Run-machine Virat Kohli equals David Warner's massive IPL record, becomes first batter this season to...

will Jacks struck a hundred, while Kohli's 70 not out powered RCB to a dominating

28/4/2024, 11:14:00 pm

positive

Read More Listen Favorite Share



General
Search: virat run machine

Virat Kohli Test Stats: From Slow Start To Becoming Run Machine To Massive Downfall

he wants to say good bye to test cricket, a format that has been the closest to his

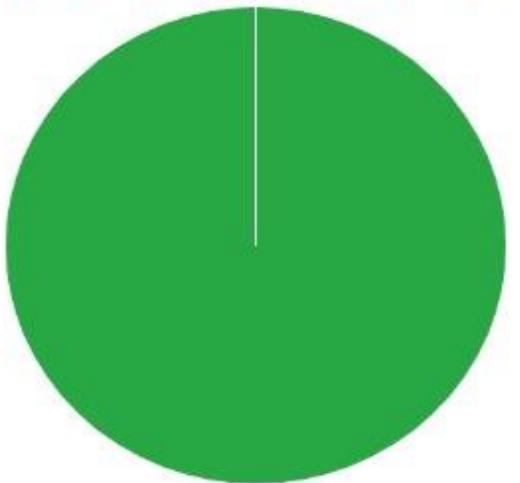
10/5/2025, 12:32:00 pm

positive

Read More Listen Favorite Share

Sentiment

Positive 😊 Neutral 😐 Negative 😞



Favorites



NEWS CATEGORY DASHBOARD

Total Articals

1,39,055

Total Authors

22,022

Total Categories

42

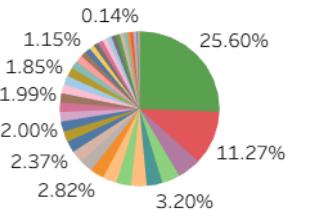
Date Range

2014 - 2022

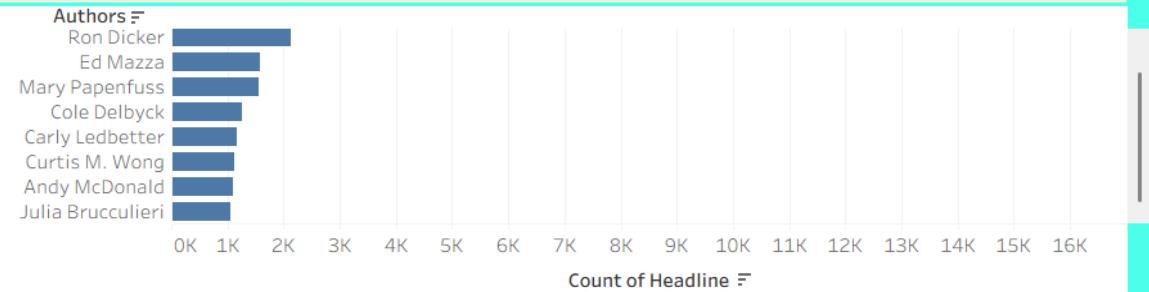
News Published Over Time



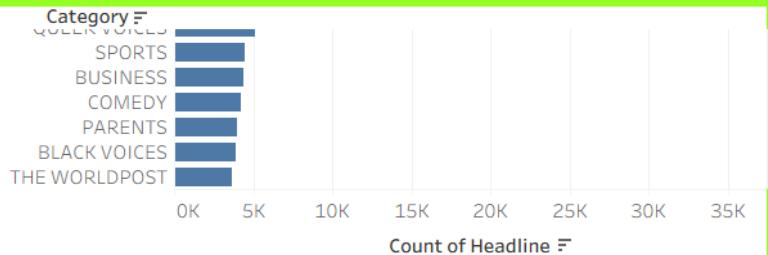
Category Share



Top Authors



Top 10 Category





➤ Conclusion

The **AI-Powered Personalized News Aggregator** successfully combines **NLP, Machine Learning, and Generative AI** to deliver **relevant, concise, and real-time news updates**.

This solution enhances **user experience** and **engagement** through personalization and automation.



➤ References

- i. Hugging Face Documentation – <https://huggingface.co/docs>
 - ii. OpenAI GPT Summarization API – <https://platform.openai.com/>
 - iii. Flask Documentation – <https://flask.palletsprojects.com/>
-
- Research papers on **AI-based news aggregation**



Data Analytics - Internship

Actively hiring

Data Analytics

Symonis



Work from home

Start Date

Immediately

Duration

3 Months

Stipend

₹ 10,000 - 20,000 /month

Apply By

18 Oct' 25

Posted 1 day ago

Internship

851 applicants



Apply now

About the work from home job/internship

As a Data Analytics intern at Symonis, you will have the exciting opportunity to apply your skills in Python, SQL, Data Analytics, MS-Excel, Data Science, Power BI, and Tableau to help drive key business decisions.

1. Assist in collecting, organizing, and analyzing data from various sources to identify trends and patterns.
2. Develop and maintain databases to store and manage data efficiently.
3. Create impactful data visualizations and reports using Power BI and Tableau for stakeholders.
4. Collaborate with cross-functional teams to gather requirements and provide data-driven insights.
5. Conduct ad-hoc analysis and support ongoing projects to optimize business processes.
6. Learn and apply new analytical techniques to enhance data interpretation and reporting.
7. Present findings and recommendations to management in a clear and concise manner.



Skill(s) required

Data Analytics

Data Science

MS-Excel

Power BI

Python

SQL

Tableau

Earn certifications in these skills

[Learn Google Analytics](#) [Learn MS-Excel](#) [Learn Python](#) [Learn Machine Learning](#) [Learn Statistical Modeling](#)
[Learn Data Analytics](#) [Learn Data Science](#) [Learn MySQL](#) [Learn SQL](#) [Learn PostgreSQL](#) [Learn MS SQL Server](#)
[Learn Power BI](#) [Learn NLP](#) [Learn AI Video Generation](#) [Learn Model Fine-tuning](#) [Learn LLMOps](#)
[Learn Generative AI Development](#) [Learn Model fine-tuning](#) [Learn Replit \(GenAI\)](#) [Learn GitHub Copilot \(GenAI\)](#)
[Learn HeyGen \(GenAI\)](#) [Learn Lovable \(GenAI\)](#) [Learn Cursor \(GenAI\)](#) [Learn MidJourney \(GenAI\)](#)
[Learn Windsurf \(GenAI\)](#) [Learn AI Image Generation](#) [Learn Elevenlabs \(GenAI\)](#) [Learn AI Voiceover](#)
[Learn Artificial intelligence](#) [Learn Deep Learning](#) [Learn Feature Engineering](#) [Learn Supervised Learning](#)
[Learn Unsupervised Learning](#) [Learn Vibe Coding](#) [Learn AI Voiceover](#)

Who can apply

Only those candidates can apply who:

1. are available for the work from home job/internship
2. can start the work from home job/internship between 18th Sep'25 and 23rd Oct'25
3. are available for duration of 3 months
4. have relevant skills and interests

* Women wanting to start/restart their career can also apply.

Perks

Certificate

Letter of recommendation

Flexible work hours

5 days a week



Thank You!