LAB 02: Activity 01 - Final Project Definition

Title & Team Members

Project Name: Feikometro

Team Members:

Abraham Yair Silva Figueroa – 173089 -- Luis Julian Alvarez Armenta – 163247 -- Luis Mario Ayala Castellanos – 174902 -- Emilio Ortiz Jaquim - 172360

Problem Statement

In the current digital era, the spread of fake news and misinformation has become a global concern. With news being disseminated rapidly through social media platforms and websites, it often becomes difficult for users to distinguish between genuine and false information.

This problem is particularly prevalent on platforms where articles, headlines, and posts are shared without adequate verification. As users rely more on the information shared through social media and online platforms, it becomes essential to provide them with a reliable tool to verify the authenticity of the content they consume.

The Fake News Classifier App aims to address this issue by utilizing Natural Language Processing (NLP) techniques to classify news articles and headlines as genuine, misleading, or fake.

Target Audience

- General Public: Individuals who consume news and information from social media platforms, websites, and news outlets.
- Journalists and Fact-Checkers: These users need reliable tools to validate news stories before publishing or disseminating them.
- Educators and Students: The app will serve as an educational tool to promote media literacy and critical thinking in educational settings.

Key Features

1. News Classification:

- Input Method: Users can input either a news headline or an article URL.
- Classification Model: The app will use a machine learning model trained on a large dataset of verified news (Fake.csv and True.csv files).
- Classification Result: After processing the input, the app will provide a real-time result indicating whether the news is genuine or fake.

2. Explanation of Results:

- Quick indication of new confidence score.
- Key Indicators: The app will provide detailed explanations of the classification decision, including:
    - Key phrases or keywords that contributed to the classification.
    - Patterns or semantic features detected in the article
- Transparency: This feature aims to provide users with a clear understanding of how the classification was determined and increase trust in the app's results.

3. Source Credibility Check:

- Reputation Check: The app will evaluate the credibility of the news by considering:
    - The source's history of publishing fake or misleading information.
    - The overall trustworthiness and reputation of the domain.
- Credibility Score: Based on the analysis, the app will generate a credibility score (from 0 to 100), helping users understand the likelihood of the source being reliable or deceptive.

Technical Approach

The Fake News Classifier App will be developed using React, ensuring it is fast, reliable, and cross-platform (iOS & Android). Here's a breakdown of the main technologies and frameworks involved:

1. Cross-Platform Development: React Native

- React Native will be the primary framework for building the mobile app, ensuring compatibility across both iOS and Android with a single codebase.

2. Natural Language Processing (NLP)

- NLP Libraries:
    - TensorFlow and PyTorch will be used to train
    - Hugging Face transformers will be employed for using pre-trained language
- Model Training: The model will be trained on a dataset of labeled news articles
- Preprocessing: Text preprocessing techniques such as tokenization, stemming, stopword removal, and TF-IDF vectorization.

3. Backend: Node.js with Express

- Server-Side Operations:
    - Node.js with Express will handle the server-side processing, including receiving the user's input (headline or URL).
    - Real-time Communication: The backend will efficiently handle requests and return responses in real-time, ensuring the app remains responsive.

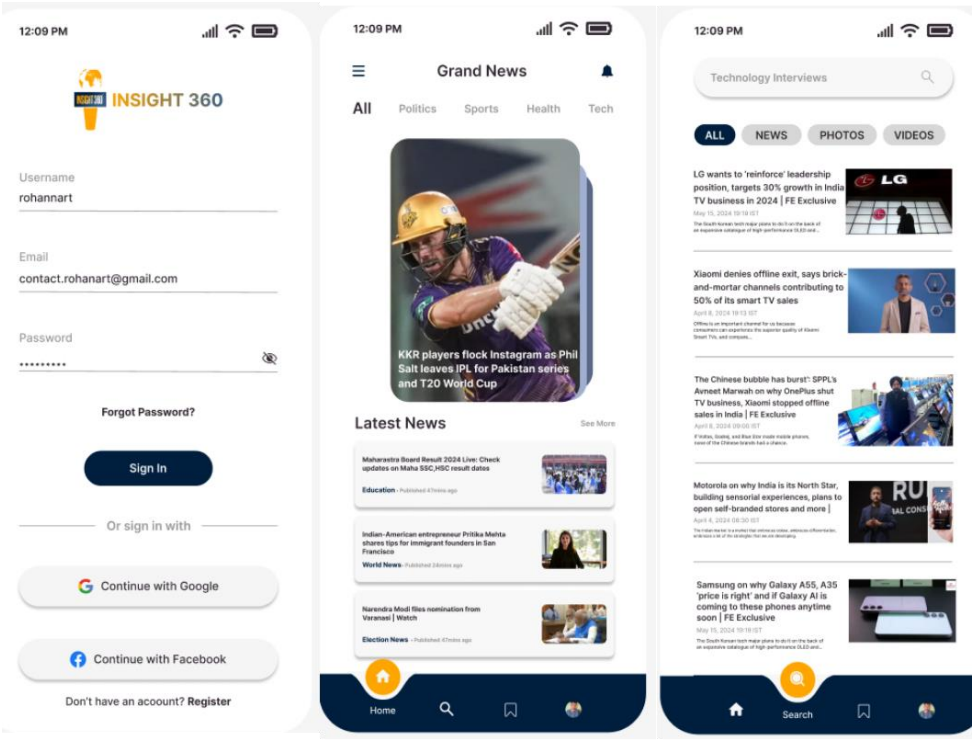
4. Database: Firebase

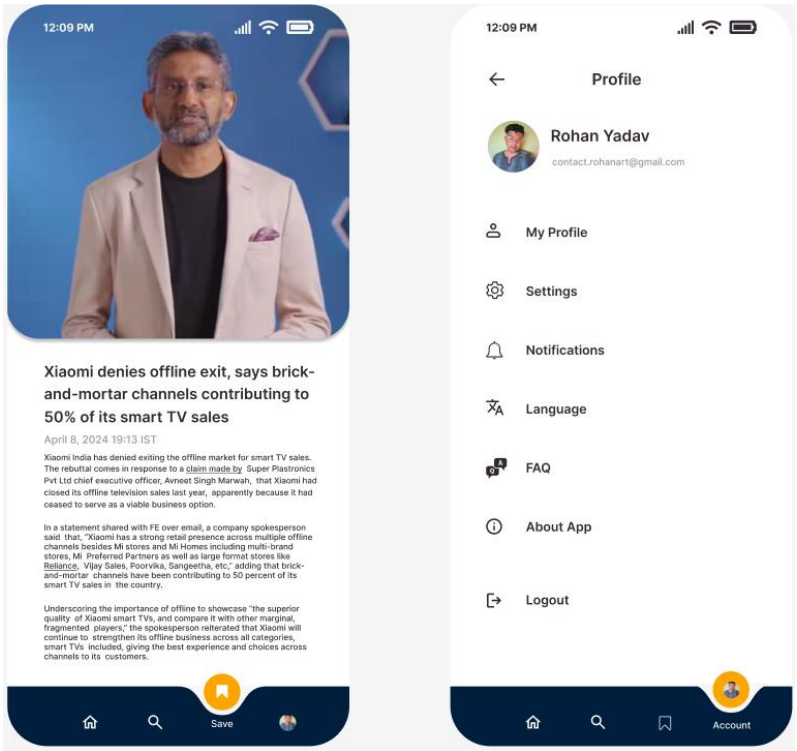
- Firebase will be used for storing user data, feedback, and classification history, as well as app analytics such as:
    - Classification requests
    - User preferences
- Scalability: Firebase's cloud-based architecture ensures the app can scale to handle millions of users without performance issues.

5. API Integration: RESTful APIs

- Frontend & Backend Communication: frontend (React Native) and the backend (Node.js with Express)

User Interface Sketches





Challenges & Risks

1. Accuracy of Classification:

Ensuring that the NLP model provides reliable, unbiased results is crucial. The model must be trained on a sufficiently large and diverse dataset to generalize across different types of news and avoid overfitting.

2. Data Availability:

A large, diverse dataset of labeled news articles (e.g., Fake.csv and True.csv) is required to train the classification model. The availability of such datasets could pose challenges, especially for certain languages or news categories.

3. Multilingual Support:

Adapting the model to handle multiple languages will require additional training data and possibly new approaches to tokenization and feature extraction for different languages.

4. User Trust:

Building trust with users is critical. Clear explanations of how classifications are made, transparency in the app's decision-making process, and frequent updates to the model will help maintain user confidence.

5. Performance:

Ensuring that the app performs efficiently on both Android and iOS devices is a key challenge. The app needs to process and classify news articles quickly, without causing delays or poor user experience.

Expected Outcome & Impact

The Fake News Classifier App is expected to:

1. Empower Users:

Provide users with a tool to critically evaluate news and make informed decisions about the credibility of information they encounter online.

2. Promote Media Literacy:

Educators and students will benefit from the app as a tool to teach media literacy, helping to develop critical thinking and the ability to analyze sources.

3. Reduce Misinformation:

By classifying fake news and providing explanations, the app will contribute to the reduction of the spread of misinformation, promoting a more informed and discerning public.

4. Support Journalists and Fact-Checkers:

Journalists and organizations can rely on the app as a tool to verify content, helping them report more accurately and avoid spreading fake news.

FEIKOMETRO

TARGET AUDIENCE

- General Public.
- Journalists and Fact-Checkers.
- Educators and Students:

FAKE NEWS AND MISINFORMATION

- current digital era, the spread of fake news and misinformation is common concern.
- Particularly prevalent on platforms where articles, headlines and post are shared without adequate verification
- Substantial part of user trust on information shared on social media.

KEY FEATURES

- Source of credibility check
- News classification
- Explanation of results

(no se como hacerla hexagono)

TECHNICAL APROACH

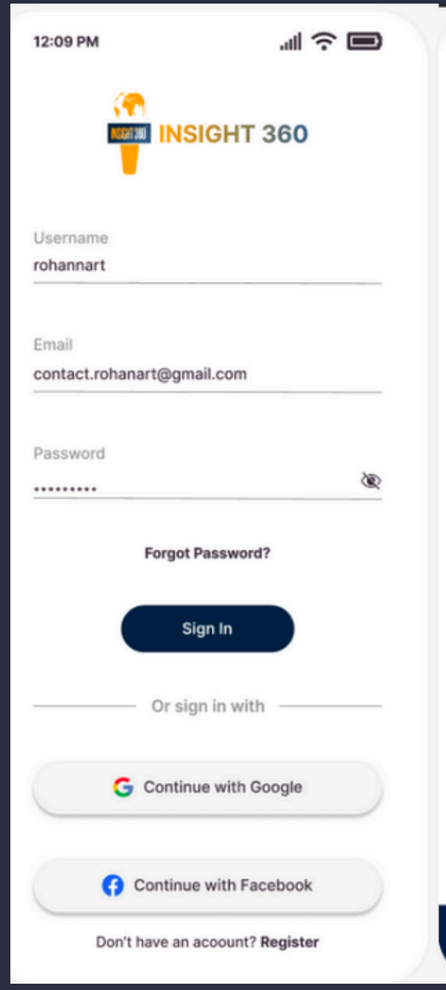
Natural language processing

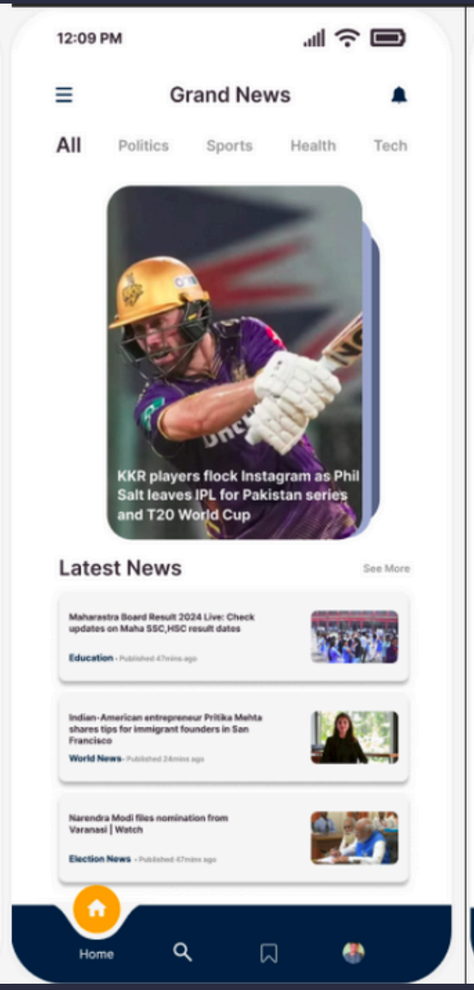
- Model Training: The model will be trained on a dataset of labeled news articles
- Preprocessing: Text preprocessing techniques such as tokenization.
- Datasets such as FakeNewsNet.

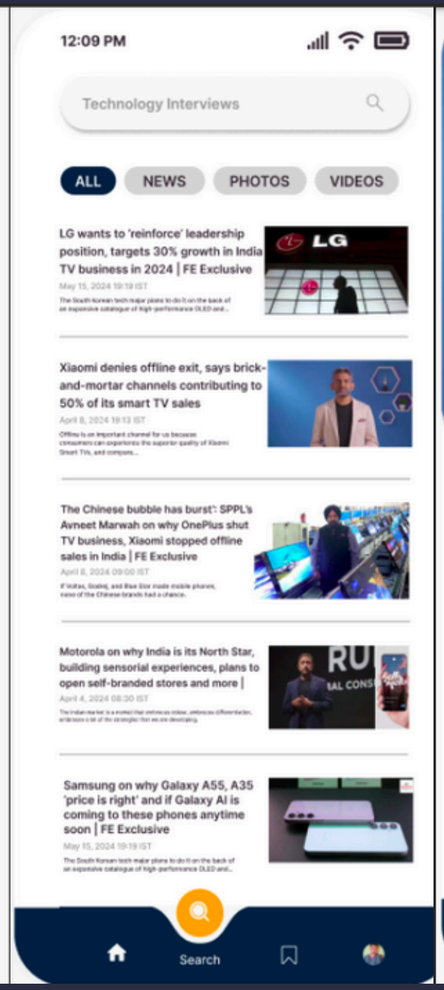
Backend

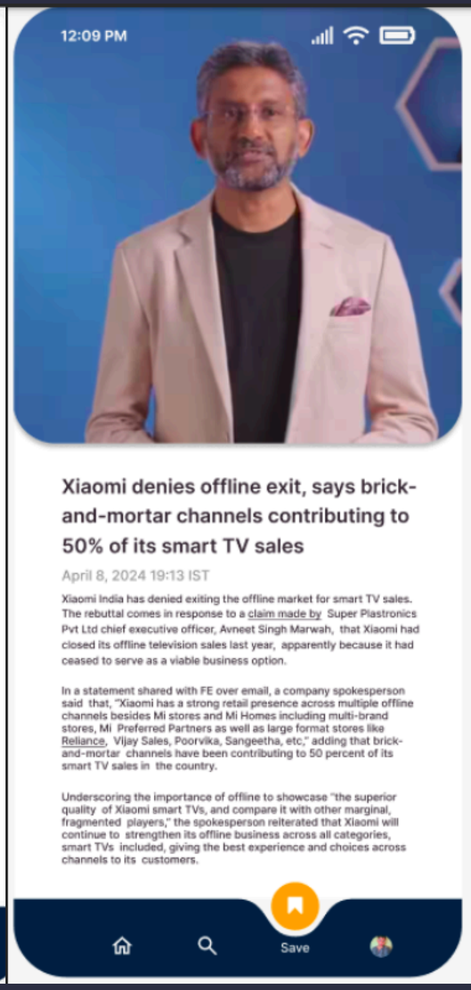
- Frontend & Backend Communication: frontend (React Native) and the backend (Node.js with Express)
- Firebase will be used for storing user data, feedback, and classification history, as well as app analytics
- Node.js with Express will handle the server-side processing, including receiving the user’s input (headline or URL).

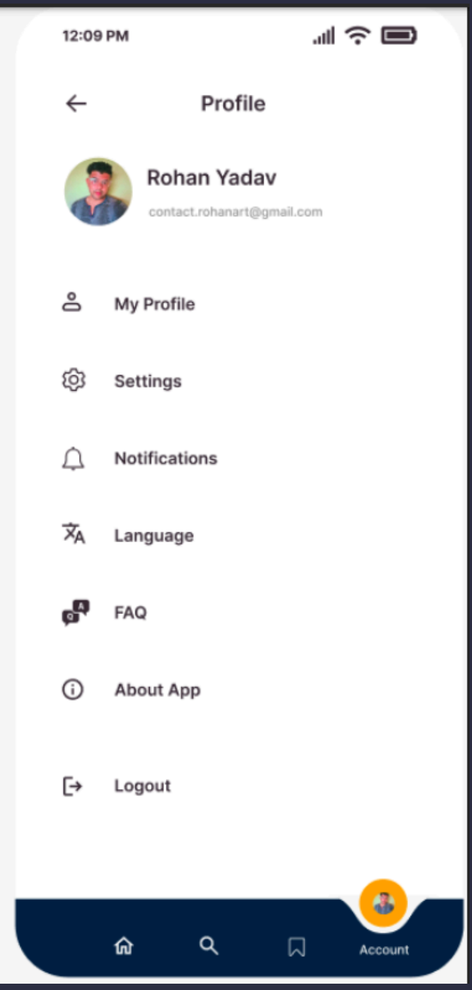
PROTOTYPE


12:09 PM
INSIGHT 360
Username
rohannart
Email
contact.rohanart@gmail.com
Password
Forgot Password?
Sign In
Or sign in with
Continue with Google
Continue with Facebook
Don't have an account? Register


12:09 PM
Grand News
All
Politics
Sports
Health
Tech
KKR players flock Instagram as Phil Salt leaves IPL for Pakistan series and T20 World Cup
Latest News
See More
Maharastra Board Result 2024 Live: Check updates on Maha SSC,HSC result dates
Education
Indian-American entrepreneur Pritika Mehta shares tips for immigrant founders in San Francisco
World News
Narendra Modi files nomination from Varanasi | Watch
Election News
Home


12:09 PM
Technology Interviews
ALL
NEWS
PHOTOS
VIDEOS
LG wants to 'reinforce' leadership position, targets 30% growth in India TV business in 2024 | FE Exclusive
Xiaomi denies offline exit, says brick-and-mortar channels contributing to 50% of its smart TV sales
The Chinese bubble has burst': SPPL's Avneet Marwah on why OnePlus shut TV business, Xiaomi stopped offline sales in India | FE Exclusive
Motorola on why India is its North Star, building sensorial experiences, plans to open self-branded stores and more |
Samsung on why Galaxy A55, A35 'price is right' and if Galaxy AI is coming to these phones anytime soon | FE Exclusive
Search


12:09 PM
Xiaomi denies offline exit, says brick-and-mortar channels contributing to 50% of its smart TV sales
April 8, 2024 19:13 IST
Xiaomi India has denied exiting the offline market for smart TV sales. The rebuttal comes in response to a claim made by Super Plastronics Pvt Ltd chief executive officer, Avneet Singh Marwah, that Xiaomi had closed its offline television sales last year, apparently because it had ceased to serve as a viable business option.
In a statement shared with FE over email, a company spokesperson said that, "Xiaomi has a strong retail presence across multiple offline channels besides Mi stores and Mi Homes including multi-brand stores, Mi Preferred Partners as well as large format stores like Reliance, Vijay Sales, Poorvika, Sangeetha, etc," adding that brick-and-mortar channels have been contributing to 50 percent of its smart TV sales in the country.
Underscoring the importance of offline to showcase "the superior quality of Xiaomi smart TVs, and compare it with other marginal, fragmented players," the spokesperson reiterated that Xiaomi will continue to strengthen its offline business across all categories, smart TVs included, giving the best experience and choices across channels to its customers.
Save


12:09 PM
Profile
Rohan Yadav
contact.rohanart@gmail.com
My Profile
Settings
Notifications
Language
FAQ
About App
Logout
Account

CHALLENGES & RISKS

- Accuracy of Classification
- Data Availability
- Multilingual Support
- User Trust
- Performance

THANK YOU

Presented by ***Aaron Loeb***