UDLAP®

LAB 04 - 06.02.2025 - Requirements

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Course:

LIS4012-1

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Project Description

The Fake News Classifier App, named Feikometro, is designed to help users detect and classify news articles and headlines as genuine or fake. In the digital era where misinformation spreads rapidly, Feikometro provides a valuable tool for individuals, journalists, and educators to verify content accuracy. The app utilizes Natural Language Processing and Machine Learning techniques to deliver reliable classification and transparency in decision-making.

Project Goals

The Feikometro app aims to combat the spread of fake news by providing users with a reliable tool to verify the authenticity of news articles and headlines in real time. It seeks to promote media literacy, support educators and students in developing critical thinking, and assist journalists and fact-checkers in verifying news efficiently. By fostering transparency and user trust, the app contributes to a more informed and discerning digital community.

Functional Requirements

News Classification:

Users can input news headlines or URLs for classification.

The system provides real-time classification results as "Genuine" or "Fake."

Explanation of Results:

Displays confidence scores and highlights keywords that contributed to the classification.

Shows patterns detected in the article content.

Source Credibility Check:

Analyze the news source's history and reputation.

Generate a credibility score ranging from 0 to 100.

Data Storage:

Save user classification history and feedback using Firebase.

Cross-Platform Support:

The app will be available on Android and iOS devices using React Native.

Real-Time Backend Processing:

Ensure responsive communication between the frontend and backend through Node.js and Express.

Non-Functional Requirements

Performance:

The app should process classification requests in less than 3 seconds.

Scalability:

Support thousands of simultaneous users through Firebase cloud services.

Security:

Secure user input and classification data through encryption and secure APIs.

Usability:

Provide an intuitive and simple user interface for all target audiences.

Transparency:

Offer clear and understandable explanations for classification results.

Reliability:

Maintain a 99% uptime for backend services.

Cross-Platform Compatibility:

Ensure consistent performance on Android and iOS devices.

Deliverable	Description	Due date
Requirements Specifications	You'll be able to log in creating an account or with Gmail account. Users will be able to reset their password if they forgot. There will be a menu that shows verified news. The app must load within 20 seconds with data and wifi. The system must handle up to 20 concurrent users. The app should work on iOS 14+.	Feb 13
UI/UX designs	Create prototypes for the app	Feb 13
Backend dev	API dev, AI training for news detecting	March 20
FrontEnd dev	Mobile app Ui, features and menus specifications	March 20
Testing & QA	User testing, user feedback	March 28
Deployment	Submission to appstore	pending
Post Launch Supp	Bug fixes, community feedback fixes	pending

Perspectiva	Factores clave	Evaluación	Comentarios
Viabilidad Técnica	*Disponibilidad de Tecnologías móviles *Conocimiento Mediano de Machine Learning en Pyhton *Conocimiento en react	Medianamente viable con buen manejo de los tiempos	
Viabilidad de Calendario	Tiempo suficiente	Alta	Riesgo: tiempo insuficiente, contratiempos (otras actividades) requieren más tiempo del esperado.
Viabilidad Operativa	*Equipo capacitado medianamente en machine learning *Capacidad del equipo para desarrollar nuevas habilidades	Altamente viable	Riesgo: sobrestimamos las habilidades del equipo y tenemos que tomar tiempo para aprender las herramientas

Name	Role	Responsibilities
Luis Julian Alvarez Armenta	Project Manager & Backend Developer	Manage project timelines and deliverables. Develop APIs, train AI models for news classification, handle database management, and ensure system scalability.
Abraham Yair Silva Figueroa	Frontend Developer	Develop UI/UX components, implement frontend features, and handle API integration.

Luis Mario Ayala Castellanos	QA Engineer & Tester	Develop and execute test cases, ensure app stability, handle user testing, bug reporting, and quality control processes.
Emilio Ortiz Jaquim	UI/UX Designer	Create user-friendly prototypes and wireframes, design intuitive navigation flows and menus, and ensure the app meets accessibility standards.

Risk	Impact	**Mitigation Strategy**
App Store Rejection	High	Ensure compliance with Play Store and App Store guidelines for user privacy, security, and content quality.
Data Security Issues	High	Implement encryption, secure APIs, and follow OWASP best practices to protect user data and prevent data breaches.
Delays in Development	Medium	Employ agile development practices, conduct daily standups, and allocate buffer time for unexpected issues.
Compatibility Issues	Medium	Test the app thoroughly on various devices using both emulators and real devices to ensure cross-platform functionality.

Requirement Analysis

Objectives of the application:
Allow users to enter a URL to analyze the veracity of the news.
Automatically extract the content of the web page associated to the URL.
Analyze the text using a fake news detection model based on NLP and machine learning techniques.
Provide a verdict (e.g., "Possible fake news" or "Probably authentic") along with a confidence score.

System Requirements:
Integration with scraping APIs or libraries for content extraction (BeautifulSoup, Newspaper3k).
Use of pre-trained NLP models (BERT, RoBERTa) optimized for fake news detection.

Design

- **Architecture:**
- Frontend: Web or mobile interface that allows the user to enter the URL and view the results.
- Backend: API that processes the URL, extracts the content, analyzes the news and returns the verdict.
- AI model: Detection engine based on machine learning or deep learning to classify the veracity.

Testing

Unit Testing:
Verify the correct extraction of content from different types of web sites.
Validate text preprocessing functions.
Integration Testing:
Ensure correct communication between frontend, backend and AI model.
Verify that the analysis works with different external APIs for scraping or semantic analysis.
Performance Testing:
Evaluate the speed of response when parsing multiple URLs simultaneously.
Stress testing to check system stability under high load.
Security Testing:
Validation of URLs to avoid vulnerabilities such as injections or malicious redirection attacks.
Sensitive data handling tests if analysis logs are stored.
User Testing (UX/UI):
Collection of user feedback to evaluate the usability of the application.
UI adjustments based on user experience to improve interaction.
Translated with DeepL.com (free version)

Delovepment

Coding using programming language React

Deployment

- **Code Preparation:** Optimize and secure the code; minimize app size.
- **Testing:** Test across Android devices and network conditions.
- **Signing:** Create a signed APK or AAB for release builds.
- **Compliance:** Ensure adherence to Google Play policies, including privacy requirements.
- **Publishing:** Submit the app to Google Play with promotional assets and app classifications.
- **Review:** Address feedback during the app review process.
- **Maintenance:** Use analytics to monitor performance and provide timely updates.

Maintenace & Updates

- **Performance Monitoring:** Use Firebase Crashlytics and Analytics for crash reporting and user engagement insights.
- **Bug Fixes & Security:** Promptly address bugs, performance issues, and apply security patches.
- **OS Compatibility:** Test and update the app for compatibility with new Android versions and API changes.
- **Feature Enhancements:** Implement user feedback and optimize user experience regularly.
- **Automated Deployment:** Utilize CI/CD pipelines with Firebase App Distribution and Google Play staged releases.