FAKE NEWS VERIFICATION AND DECTECTION

PRESENTED BY

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PROJECT STATEMENT

In the digital era, misinformation and fake news spread rapidly through social media, blogs, and online platforms, influencing public opinion and decision-making. Manual verification of content is time-consuming and unreliable.

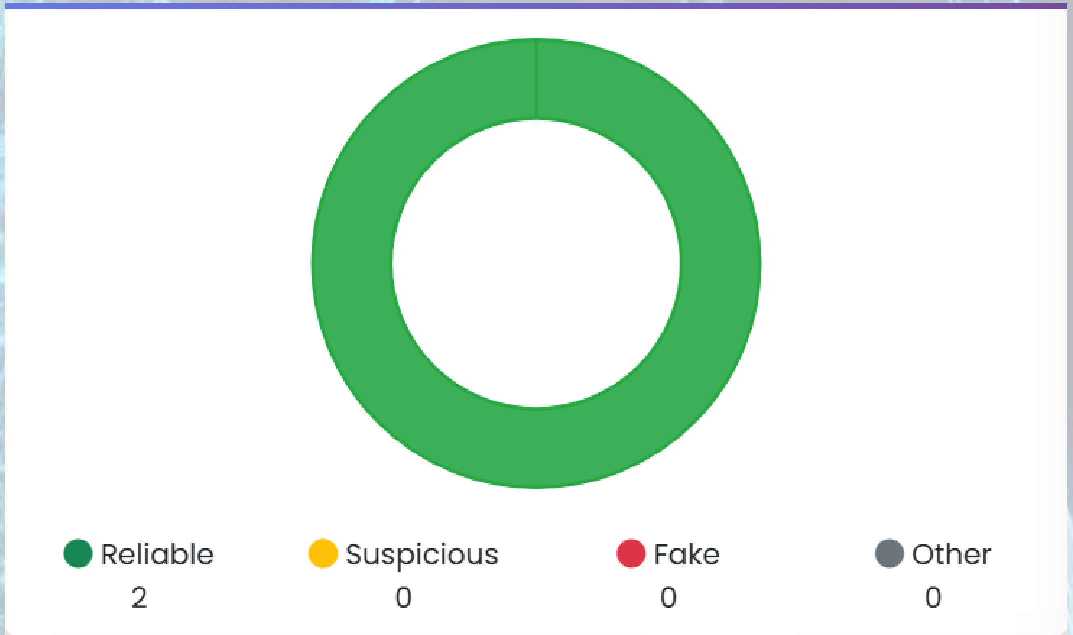
TruthGuard aims to design and develop an AI-powered web application that can automatically analyze textual content or URLs and classify them as Reliable, Suspicious, or Fake, providing users with quick, accurate, and insightful results to promote media literacy and trust in digital information.

Objectives of the Project

- To detect fake and misleading news using Machine Learning & NLP
- To analyze both text content and URLs
- To provide real-time credibility scores
- To offer a user-friendly web interface
- To maintain analysis history and dashboards
- To support admin-level monitoring and analytics

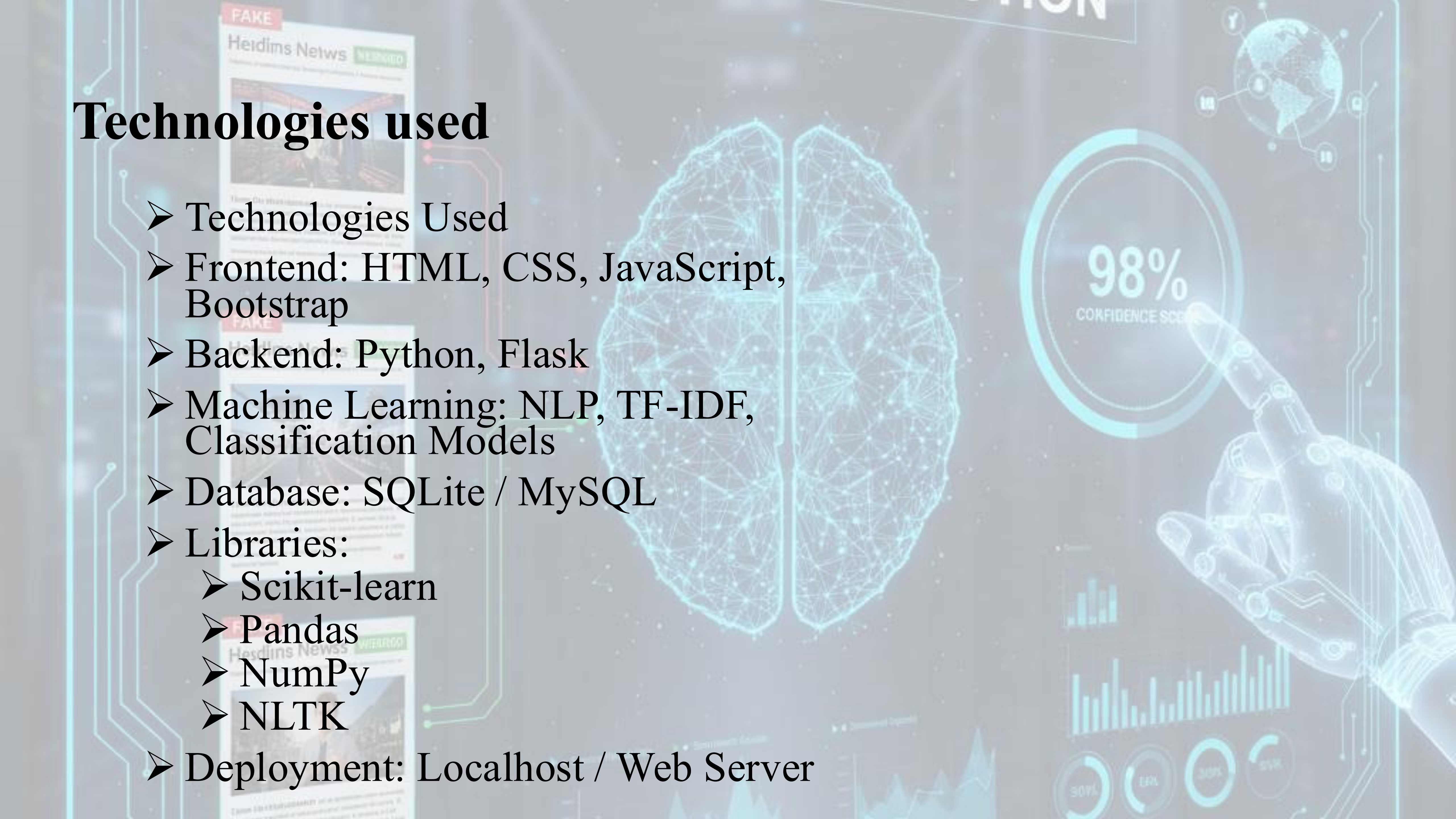
OUTCOMES

- Expected Outcomes
- Accurate classification of news as:
  - ✅ Reliable
  - ⚠ Suspicious
  - ❌ Fake
- Reduction in the spread of misinformation
- Improved awareness among users
- Centralized dashboard for analysis insights
- Scalable system for future AI enhancements

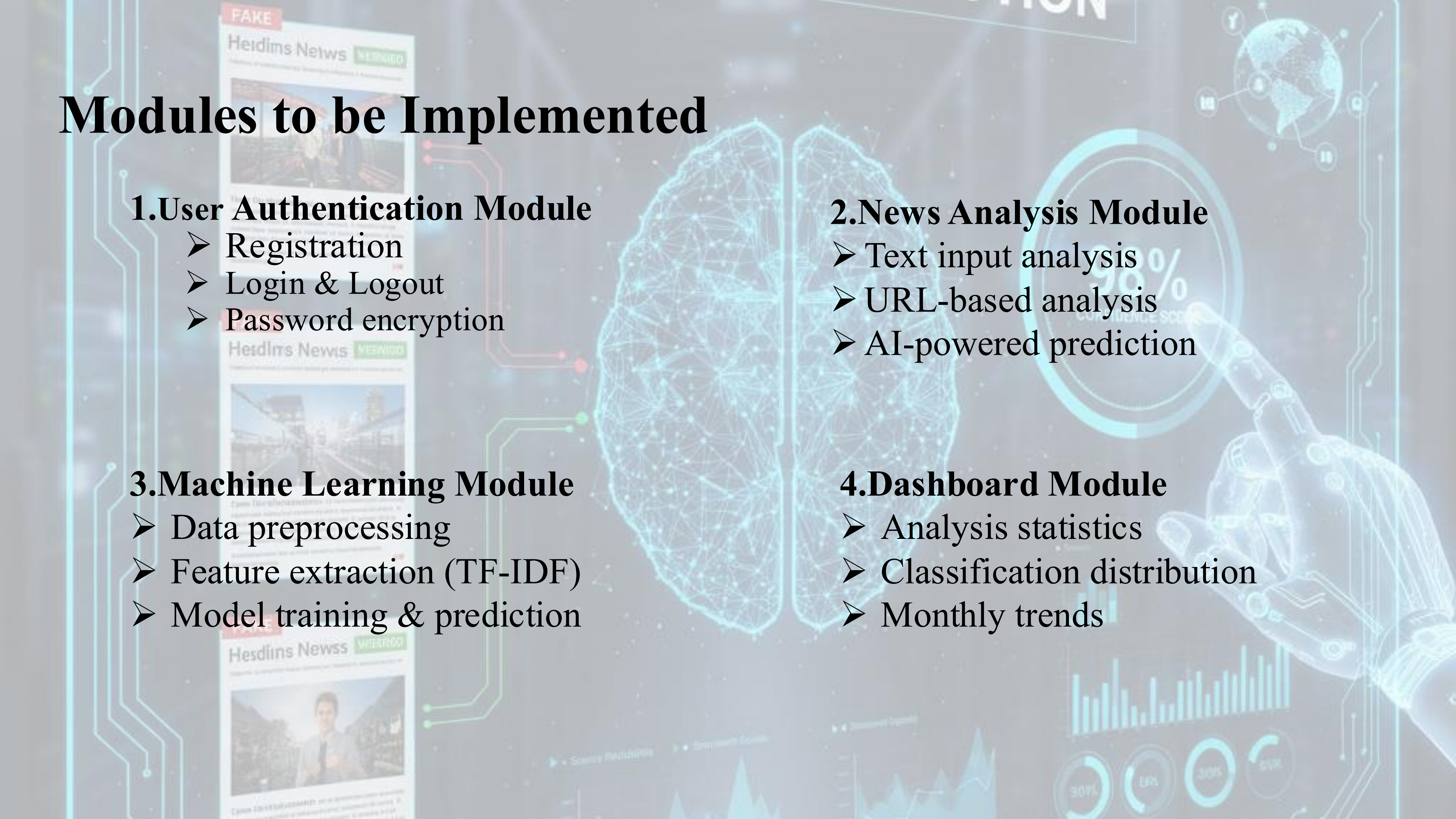


Technologies used

- Technologies Used
- Frontend: HTML, CSS, JavaScript, Bootstrap
- Backend: Python, Flask
- Machine Learning: NLP, TF-IDF, Classification Models
- Database: SQLite / MySQL
- Libraries:
  - Scikit-learn
  - Pandas
  - NumPy
  - NLTK
- Deployment: Localhost / Web Server



Modules to be Implemented



1.User Authentication Module

- Registration
- Login & Logout
- Password encryption

2.News Analysis Module

- Text input analysis
- URL-based analysis
- AI-powered prediction

3.Machine Learning Module

- Data preprocessing
- Feature extraction (TF-IDF)
- Model training & prediction

4.Dashboard Module

- Analysis statistics
- Classification distribution
- Monthly trends

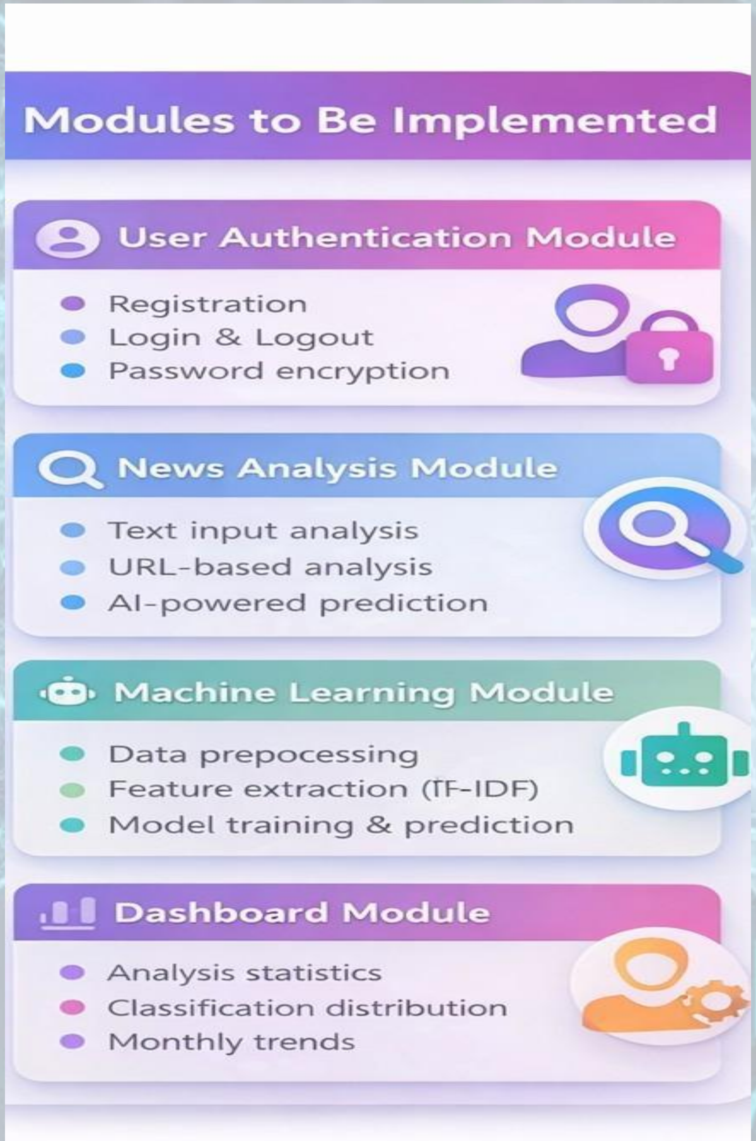
Modules to be Implemented

5. Profile Management Module

- ➢ User details
- ➢ Notification preferences
- ➢ Activity tracking

6. Admin Module

- ➢ User management
- ➢ System-wide analytics
- ➢ Confidence monitoring



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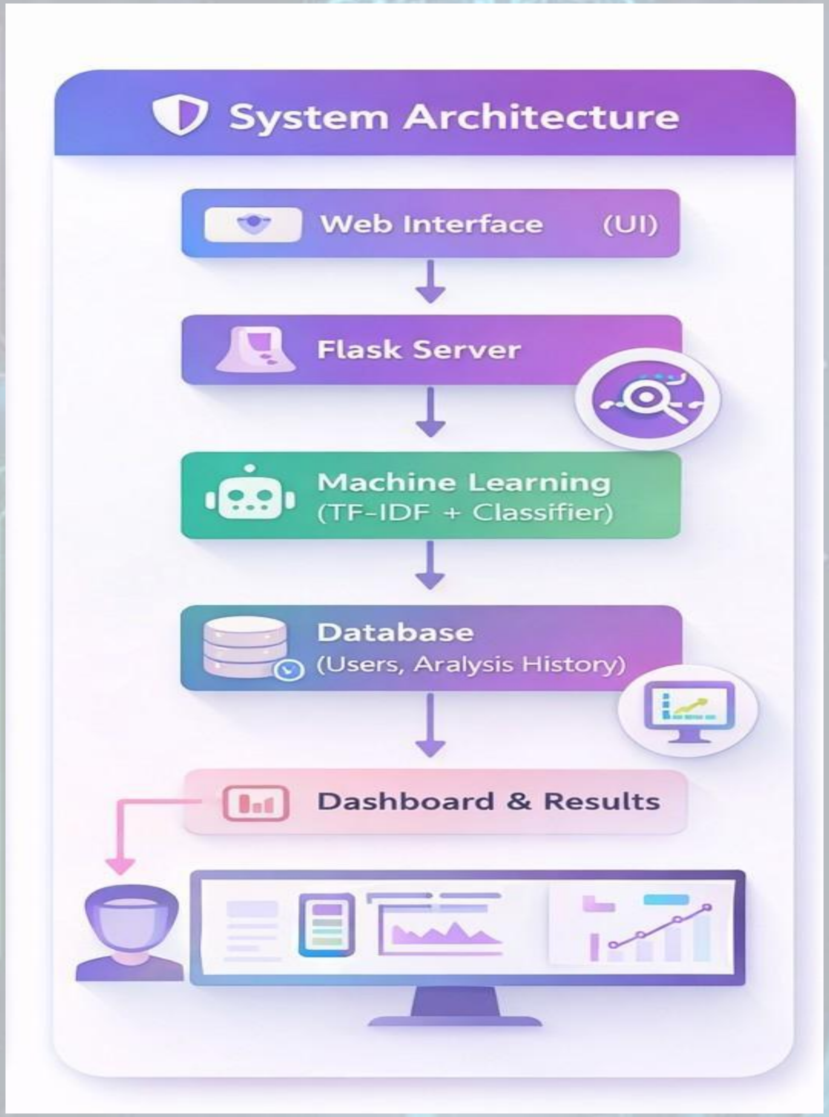
System Architecture



System Architecture

Web Interface (UI)

Flask Server

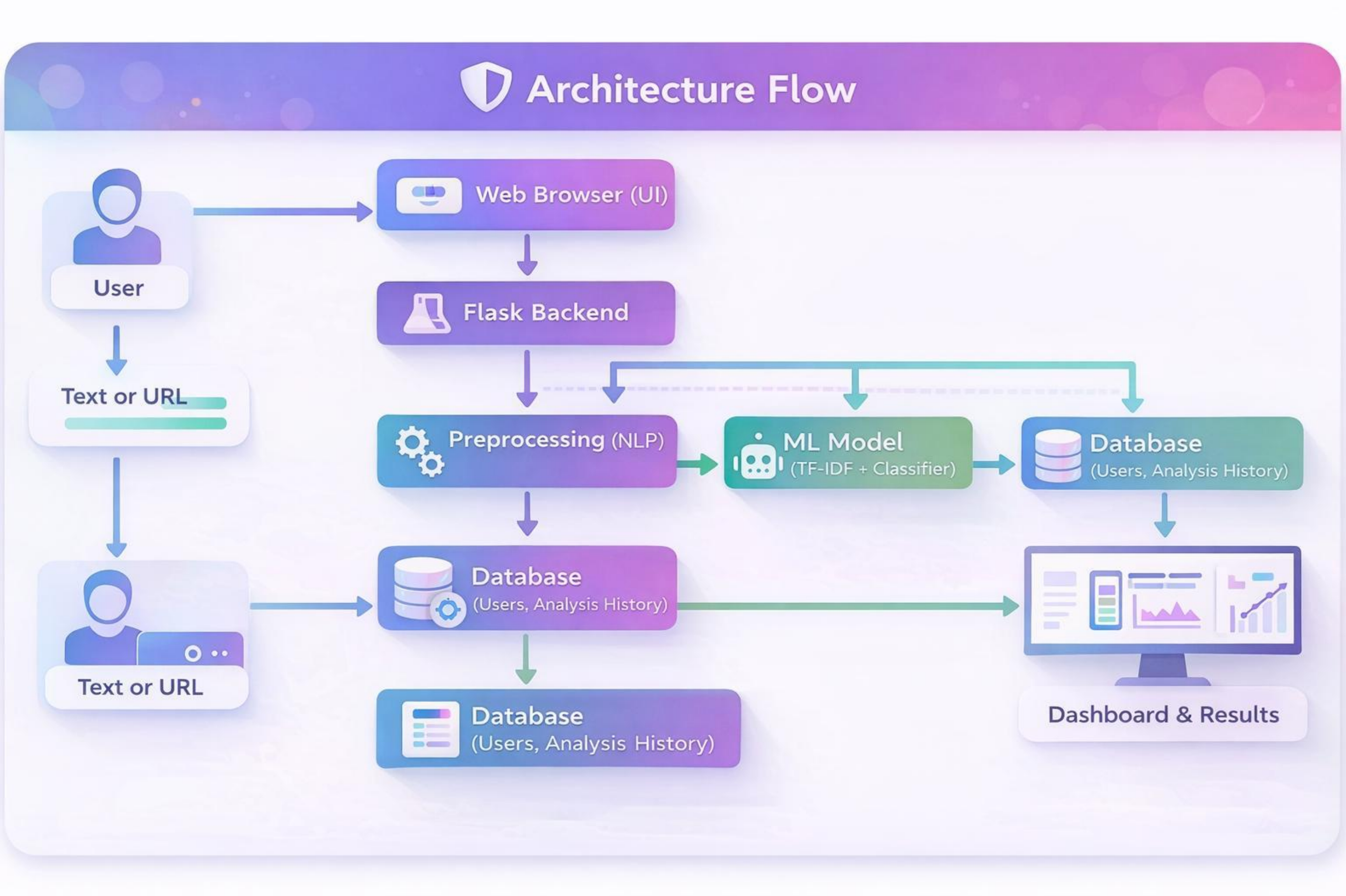
Machine Learning (TF-IDF + Classifier)

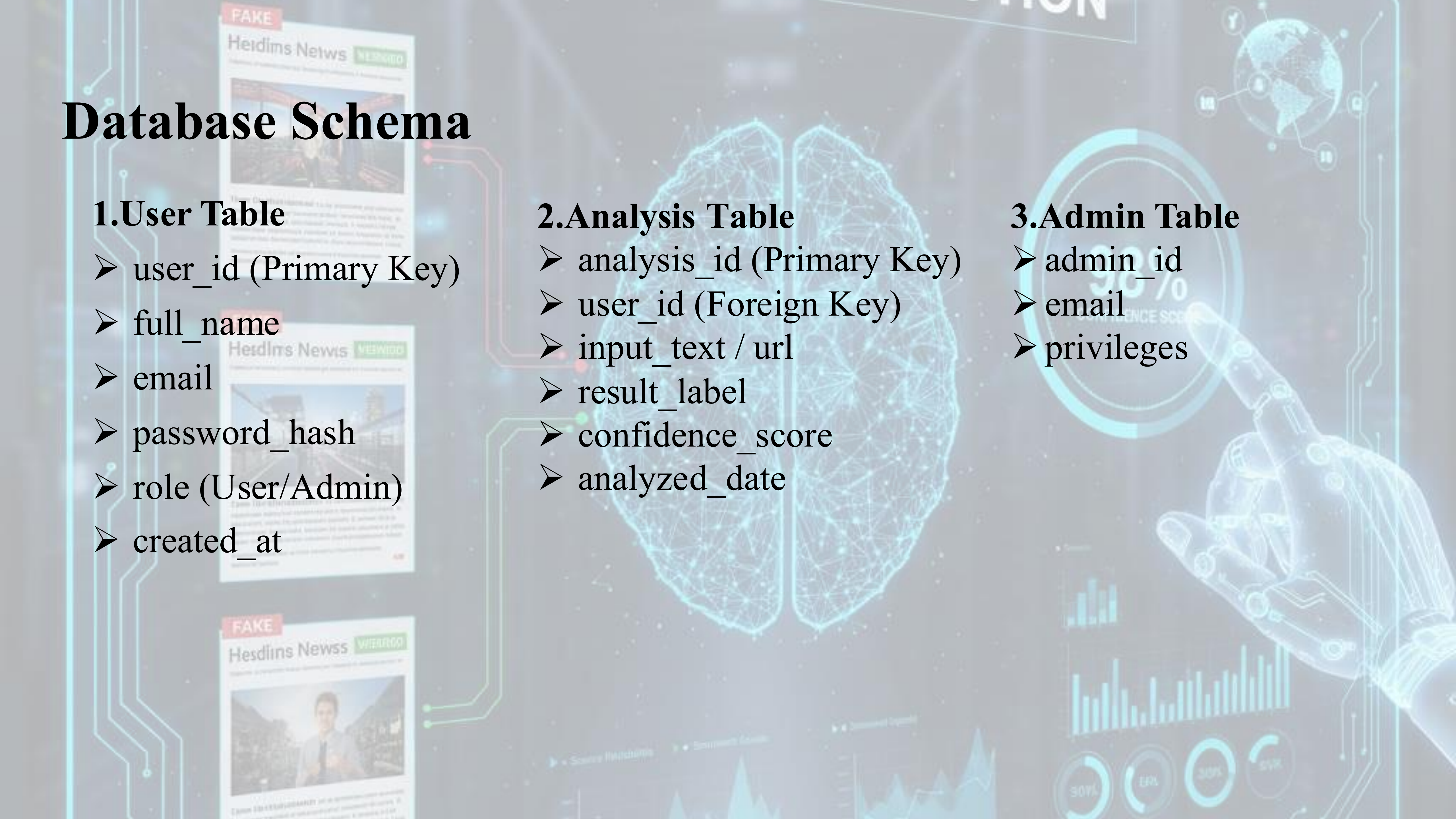
Database (Users, Aralysis History)

Dashboard & Results

Architecture Flow

- User inputs text/URL
- Flask backend receives request
- Preprocessing & feature extraction
- ML model predicts credibility
- Result stored in database
- Output displayed on dashboard





Database Schema

1.User Table

- user_id (Primary Key)
- full_name
- email
- password_hash
- role (User/Admin)
- created_at

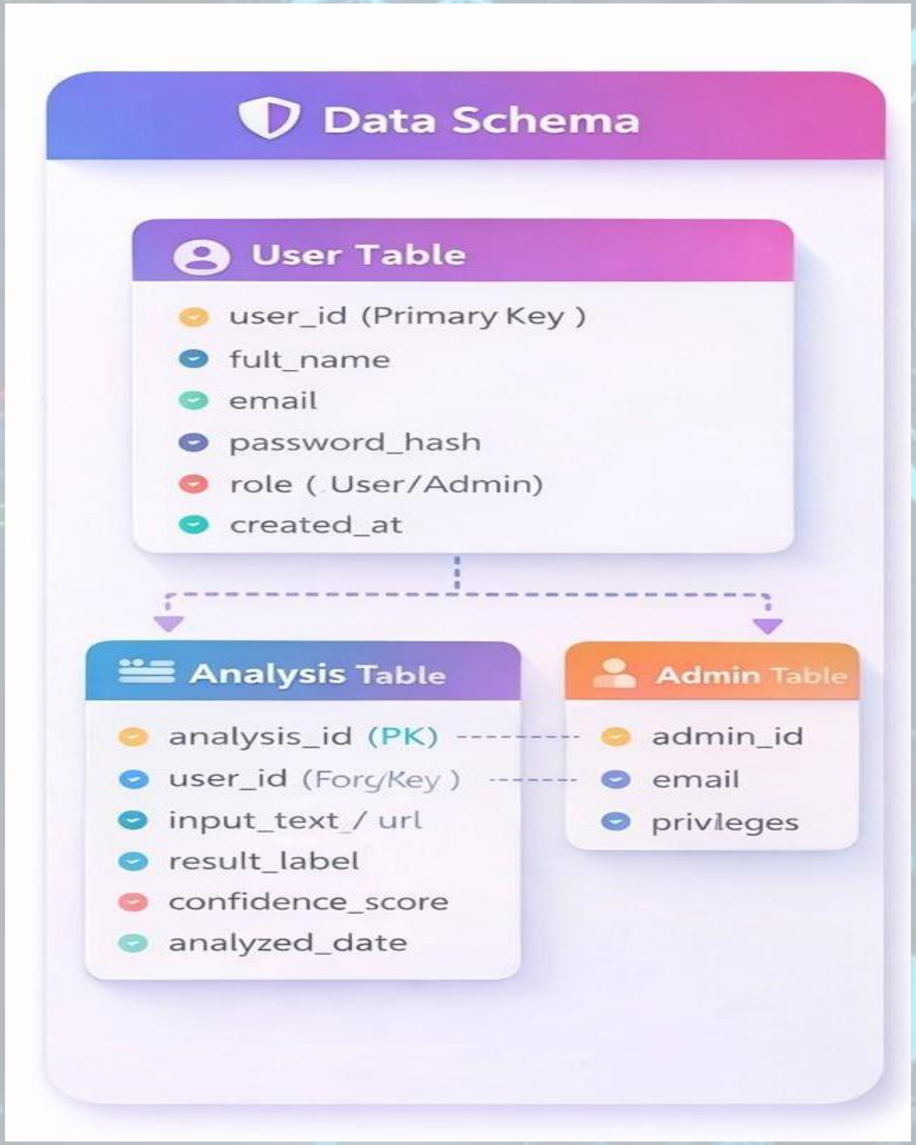
2.Analysis Table

- analysis_id (Primary Key)
- user_id (Foreign Key)
- input_text / url
- result_label
- confidence_score
- analyzed_date

3.Admin Table

- admin_id
- email
- privileges

Database Schema



Data Schema

User Table

- user_id (Primary Key)
- fult_name
- email
- password_hash
- role (User/Admin)
- created_at

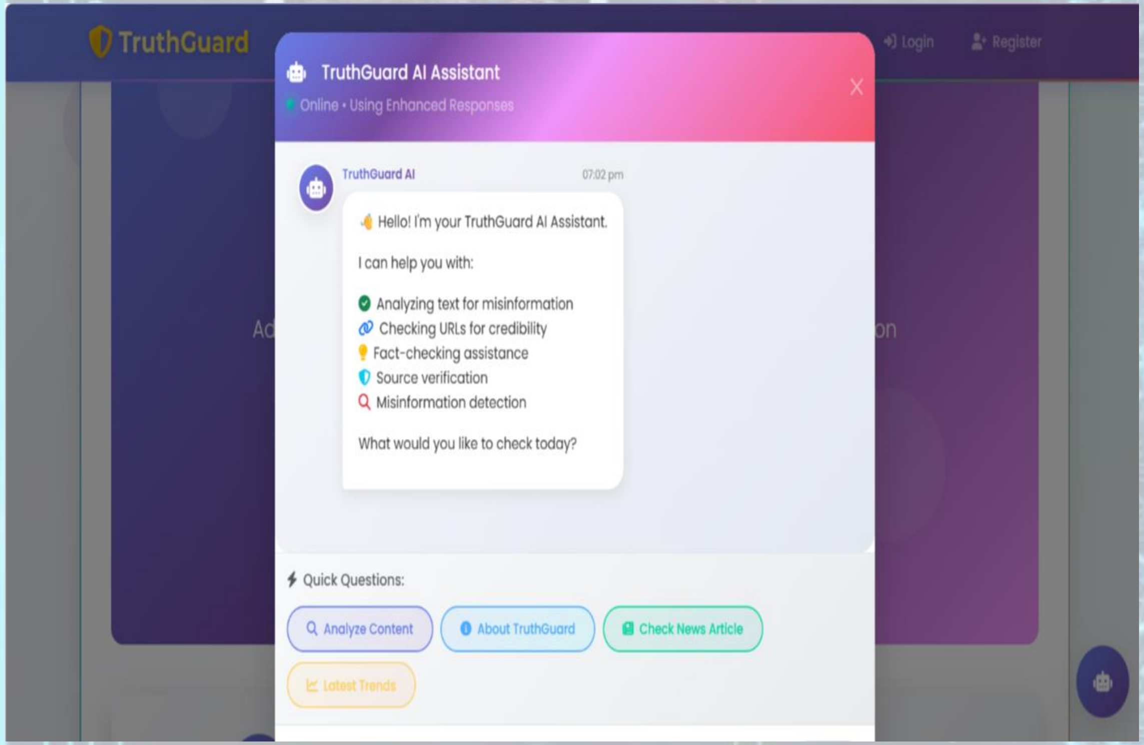
Analysis Table

- analysis_id (PK)
- user_id (Forg/Key)
- input_text / url
- result_label
- confidence_score
- analyzed_date

Admin Table

- admin_id
- email
- privileges

Output:



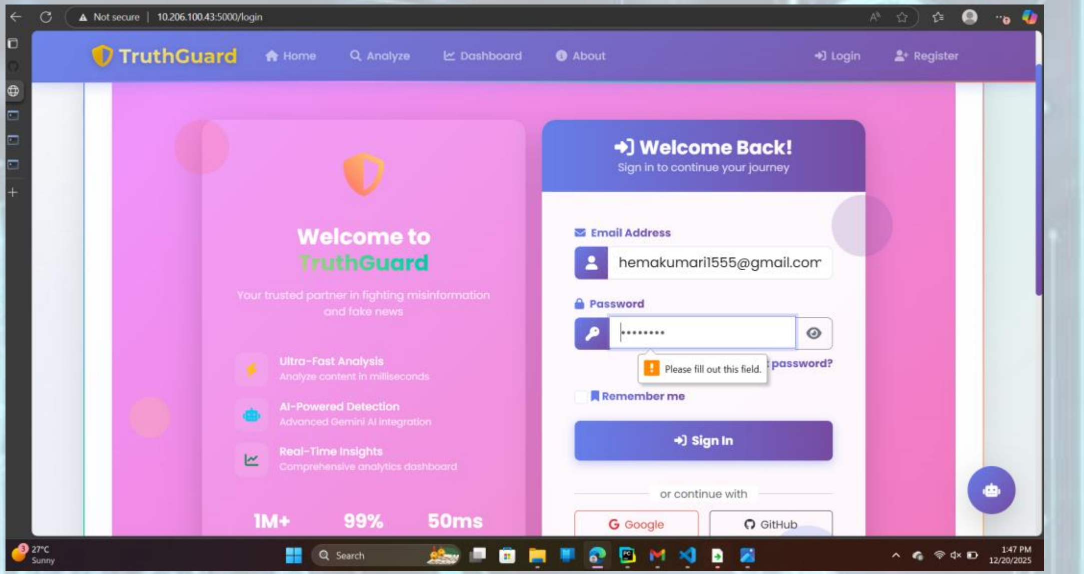
TruthGuard AI 07:02 pm

👋 Hello! I'm your TruthGuard AI Assistant.

I can help you with:

- ✓ Analyzing text for misinformation
- Checking URLs for credibility
- Fact-checking assistance
- Source verification
- Misinformation detection

What would you like to check today?



Welcome to TruthGuard

Your trusted partner in fighting misinformation and fake news

Ultra-Fast Analysis
Analyze content in milliseconds

AI-Powered Detection
Advanced Gemini AI integration

Real-Time Insights
Comprehensive analytics dashboard

1M+ 99% 50ms

Welcome Back!
Sign in to continue your journey

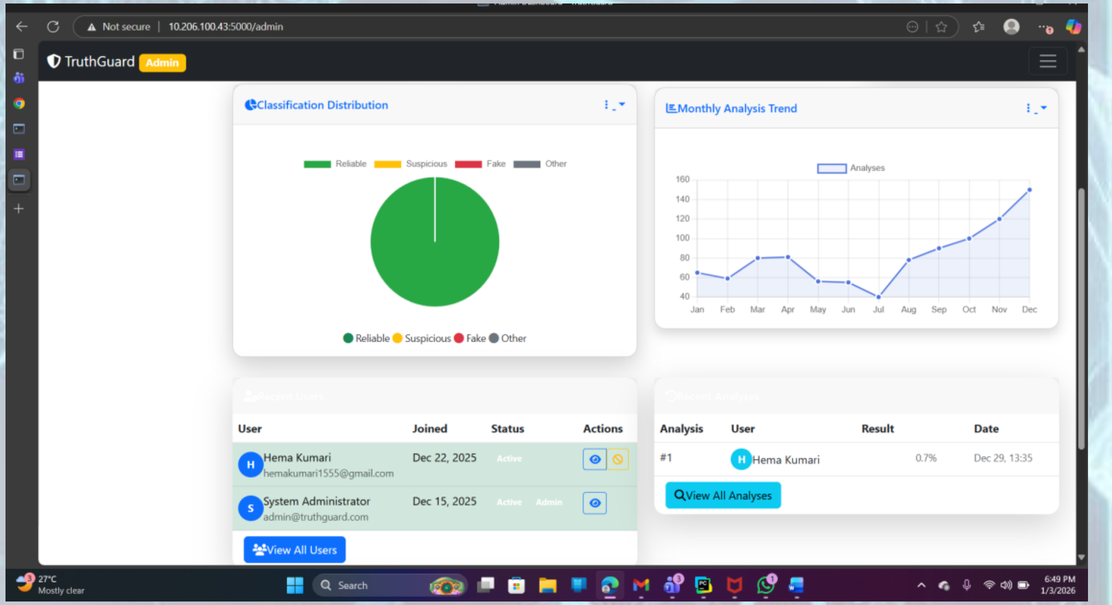
Email Address: hemakumari1555@gmail.com

Password: ••••••••

Please fill out this field.

password?

□ Remember me



User	Joined	Status	Actions
Hema Kumari hemakumari1555@gmail.com	Dec 22, 2025	Active	
System Administrator admin@truthguard.com	Dec 15, 2025	Active Admin	

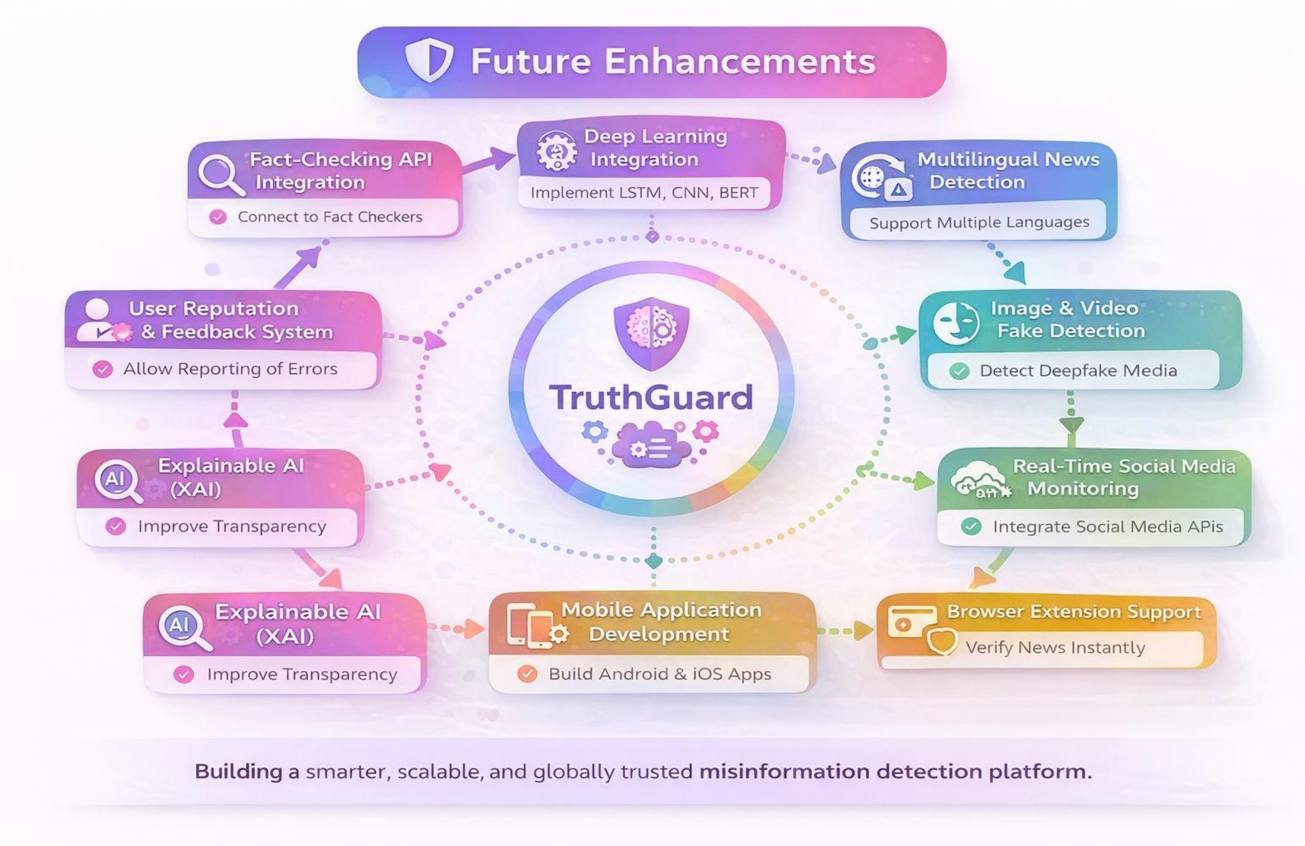
View All Users

Analysis	User	Result	Date
#1	Hema Kumari	0.7%	Dec 29, 13:35

View All Analyses

Future Enhancement

1. Deep learning integration
2. Multilingual News Detection
3. Image & Video Fake Detection
4. Real-Time Social Media Monitoring
5. Browser Extension Support
6. Mobile Application Development
7. Cloud Deployment & Scalability
8. Explainable AI (XAI)
9. Fact-Checking API Integration
10. User Reputation & Feedback System


Future Enhancements
Fact-Checking API Integration
Connect to Fact Checkers
Deep Learning Integration
Implement LSTM, CNN, BERT
Multilingual News Detection
Support Multiple Languages
User Reputation & Feedback System
Allow Reporting of Errors
TruthGuard
Image & Video Fake Detection
Detect Deepfake Media
Explainable AI (XAI)
Improve Transparency
Real-Time Social Media Monitoring
Integrate Social Media APIs
Explainable AI (XAI)
Improve Transparency
Mobile Application Development
Build Android & iOS Apps
Browser Extension Support
Verify News Instantly

Building a smarter, scalable, and globally trusted **misinformation detection platform.**