

FACT ANALYSIS & REPORTING PLATFORM

This platform is designed to empower fact-checking through advanced data analysis and comprehensive reporting. By integrating real-time verification technologies, it supports users in assessing claim accuracy quickly and reliably.



by

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Problem Statement

Misinformation spreads rapidly, eroding public trust and decision-making. Current fact-checking tools lack real-time web access and automated claim analysis.


This causes incomplete verification, biased reports, and delayed responses to evolving news narratives. Collaborative, scalable platforms for sharing fact-checks are missing.

❗ Proposed solution combats these challenges by integrating Perplexity’s **Sonar Pro** API for accurate, transparent, and shareable fact-check reports.



Misinformation Impact

Rapid spread undermines trust and decisions worldwide.




Limitations of Current Tools

Static databases and manual processes slow fact-checking.



Need for Real-Time Solutions

Automated claims analysis and scalable sharing platforms.



Proposed Solution

Real-time web search with claim extraction and source ranking.

Target Users and Solution Benefits



General Public

Individuals seeking reliable news and verifying social media content.



Journalists & Researchers

Professionals requiring quick, evidence-based fact verification for accurate reporting.



Content Creators & Influencers

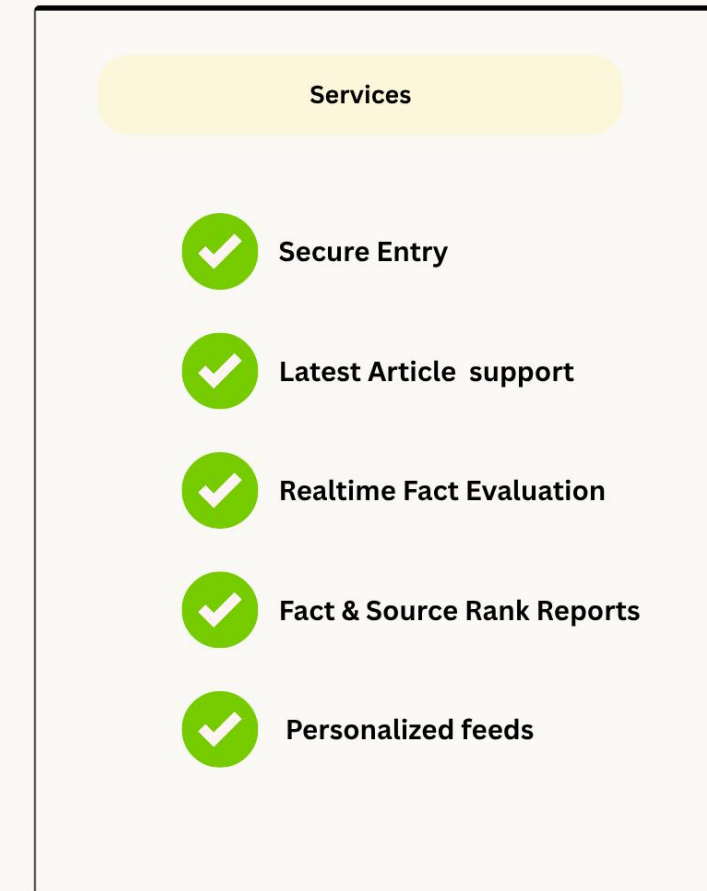
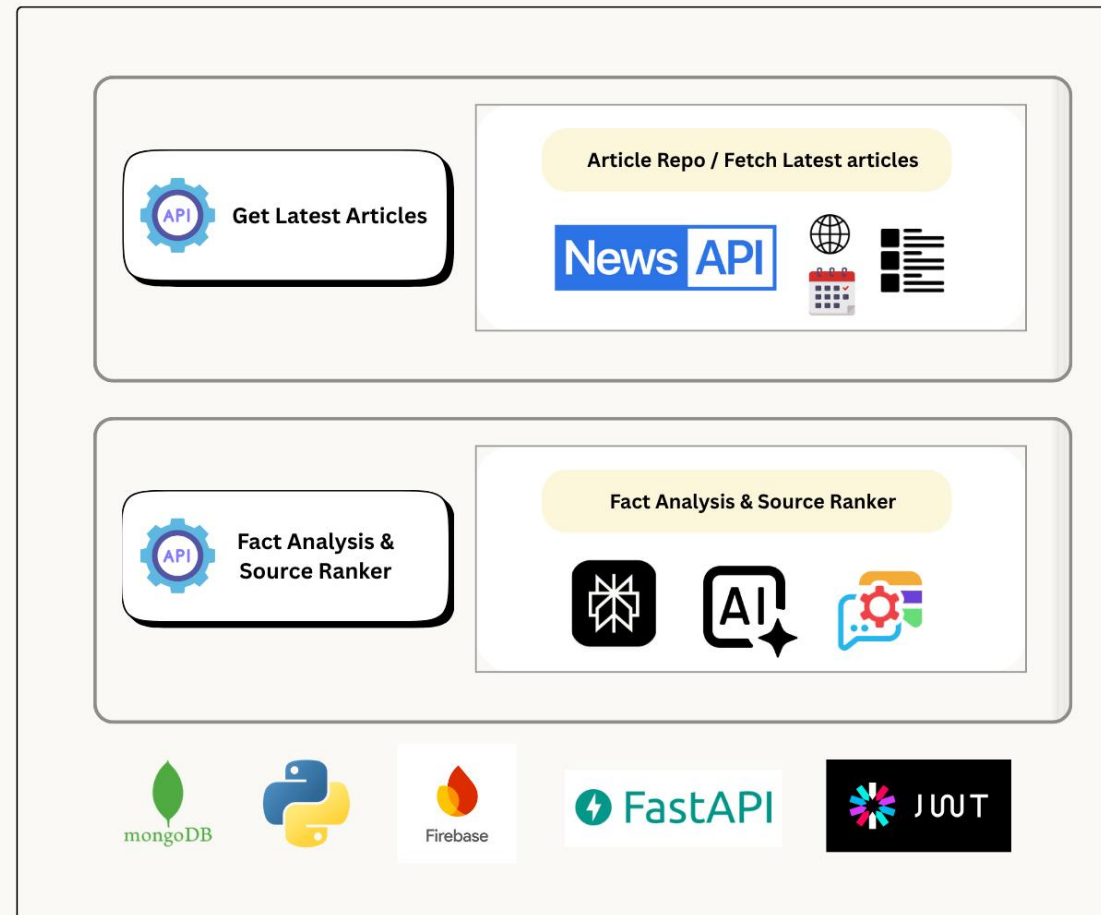
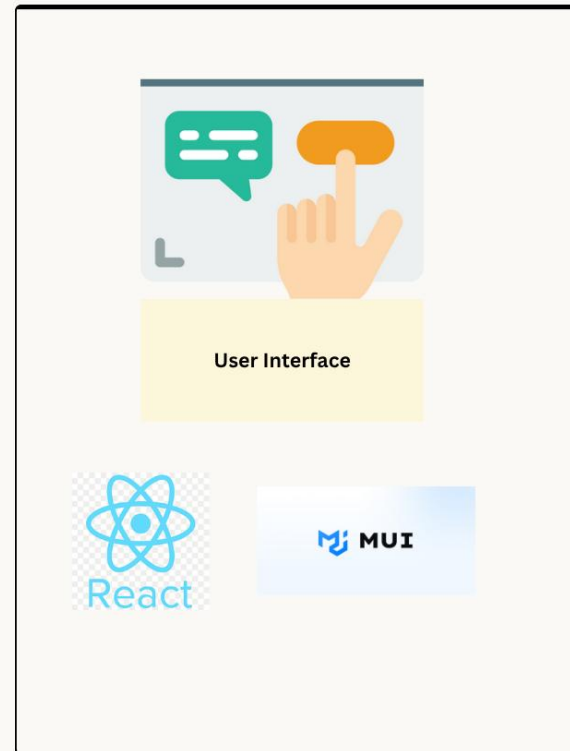
Social media figures ensuring credibility to build trust with their followers.



Community Moderators & Fact-Checkers

Volunteers and pros managing misinformation with efficient, real-time tools.

SYSTEM ARCHITECTURE



User Management System



Firebase Authentication

Manages user signup and login via email and password, supporting multi-factor authentication (MFA). Generates JWT tokens ensuring secure session management throughout.



Email Verification

Sends confirmation links to users' emails for account validation. Updates user status post-verification, leveraging Firebase's built-in email verification mechanism.



Profile Storage

Stores user metadata such as country and topics of interest securely in MongoDB. Enables personalized content delivery based on user preferences.



Fact Analysis Engine



Sonar Pro API

Processes article metadata and extracts article content with a **high**-context window, facilitating detailed claim segmentation and verification.



Claim Segmentation

Utilizes NLP techniques like sentence segmentation and entity recognition to isolate individual claims for independent evaluation.



Claim Verification

Conducts real-time web search to cross-reference claims against multiple sources and provides a report with **claim status, raw excerpt & relevance evidence excerpt**





Source Ranking & Tonality Analysis



Source Ranking Factors

- Domain Authority
- Citation Frequency
- Publication Recency

These factors are combined via a weighted algorithm to objectively assess source reliability.



Textual Metrics

- Verbatim Match
- Omission Rate
- Novelty Ratio
- Citation Integrity
- Temporal Consistency

Each metric evaluates claim-source alignment and content integrity.



Tonality Analysis

Applies chain-of-thought reasoning for sentiment and rhetorical pattern detection, flagging potential bias like dramatization or context shifts.



Source Evidence Excerpt

1

Excerpt Storage

Stores extracted article excerpts with comprehensive source metadata in MongoDB for quick retrieval.

2

Highlighted Navigation

Uses highlight matching text in source articles dynamically, improving user context awareness.

3

UI Integration

Built on React to render interactive excerpts with dynamic URLs, enabling seamless navigation between claims and sources.



Public Report Sharing & Image Integration



Report Sharing

Aggregates fact analysis results into unique MongoDB documents. Supports configurable privacy settings to control report visibility.



Image Integration

Stores image URLs alongside metadata. Images are presented in a responsive card layout with lazy loading, enhancing feed engagement through visual storytelling.



Optimization Techniques

Caches API responses to reduce overhead. Uses Tailwind CSS for adaptive, fast-loading interfaces served via Firebase CDN for optimal performance.

Leveraging Perplexity's Sonar Pro

Core Functionalities

Utilizes Sonar Pro for comprehensive claim segmentation, verification, source ranking, tonality detection, and image extraction.

Performance & Accuracy

Supports high query volumes with low latency and structured JSON outputs, ensuring precise and transparent fact analysis.

Community Engagement

Image integration and detailed reporting foster a robust user network through feed-based interactions and content sharing.



Thank You

We appreciate your attention and interest in our fact analysis platform.

Feel free to reach out with questions or feedback. Let's advance truth together.

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