



Architectural Flow for AI-Based Fake News Detection Extension

1. User Interaction Layer (Browser Extension UI)

1. User reads or opens a news article on any website.
2. Extension icon/button triggers automatic or manual scanning.
3. Visual feedback: flags article as *Real*, *Misleading*, or *Fake*.

2. Data Extraction Module

1. Extract the article content:
 - a. Title
 - b. Body text
 - c. Source URL
 - d. Metadata (author, publish date if available)
2. Preprocess extracted text (cleaning, removing HTML tags, tokenization).

3. NLP & Feature Extraction Module

1. Apply NLP techniques:
 - a. Text normalization (lowercase, remove stopwords, stemming/lemmatization).

- b. Feature extraction (TF-IDF, word embeddings like BERT, RoBERTa).
 - c. Extract linguistic cues (sentiment, writing style, readability).
2. Optionally extract named entities or topics for deeper analysis.

4. Fake News Classification Model

1. Load your trained AI model (e.g., fine-tuned transformer, LSTM, or classical ML model).
2. Input extracted features and output classification:
 - a. Labels such as *Real*, *Fake*, *Misleading* with confidence scores.

5. Fact-Checking API Integration

1. Query external fact-checking APIs (e.g., Google Fact Check Tools API, FactCheck.org API):
 - a. Send article claims, title, or summary.
 - b. Receive fact-check verdicts and supporting evidence.
2. Cross-validate model prediction with API response.

6. Decision Fusion & Final Verdict

1. Fuse AI model output + fact-check API results.
2. Apply rules or weighted scoring for final decision.
3. Example:
 - a. If model predicts *Fake* + API confirms falsehood → label as *Fake*.
 - b. If model uncertain but API supports truth → label as *Real*.
 - c. Else → label as *Potentially Misleading*.

7. User Feedback & Logging

1. Display final verdict to the user with confidence and fact-checking details.
2. Allow user to provide feedback (agree/disagree).
3. Log data for continuous improvement and model retraining.

8. Backend (Optional)

1. Maintain a database for:
 - a. User feedback.
 - b. Cached fact-check results for faster future queries.
 - c. Model updates and analytics.

Visual Summary

User Browser Extension UI



Extract Article Content



NLP Preprocessing & Feature Extraction



AI Fake News Classification Model



Fact-checking API Query



Decision Fusion & Final Verdict



Show Result to User



Collect User Feedback



Optional Backend Logging