

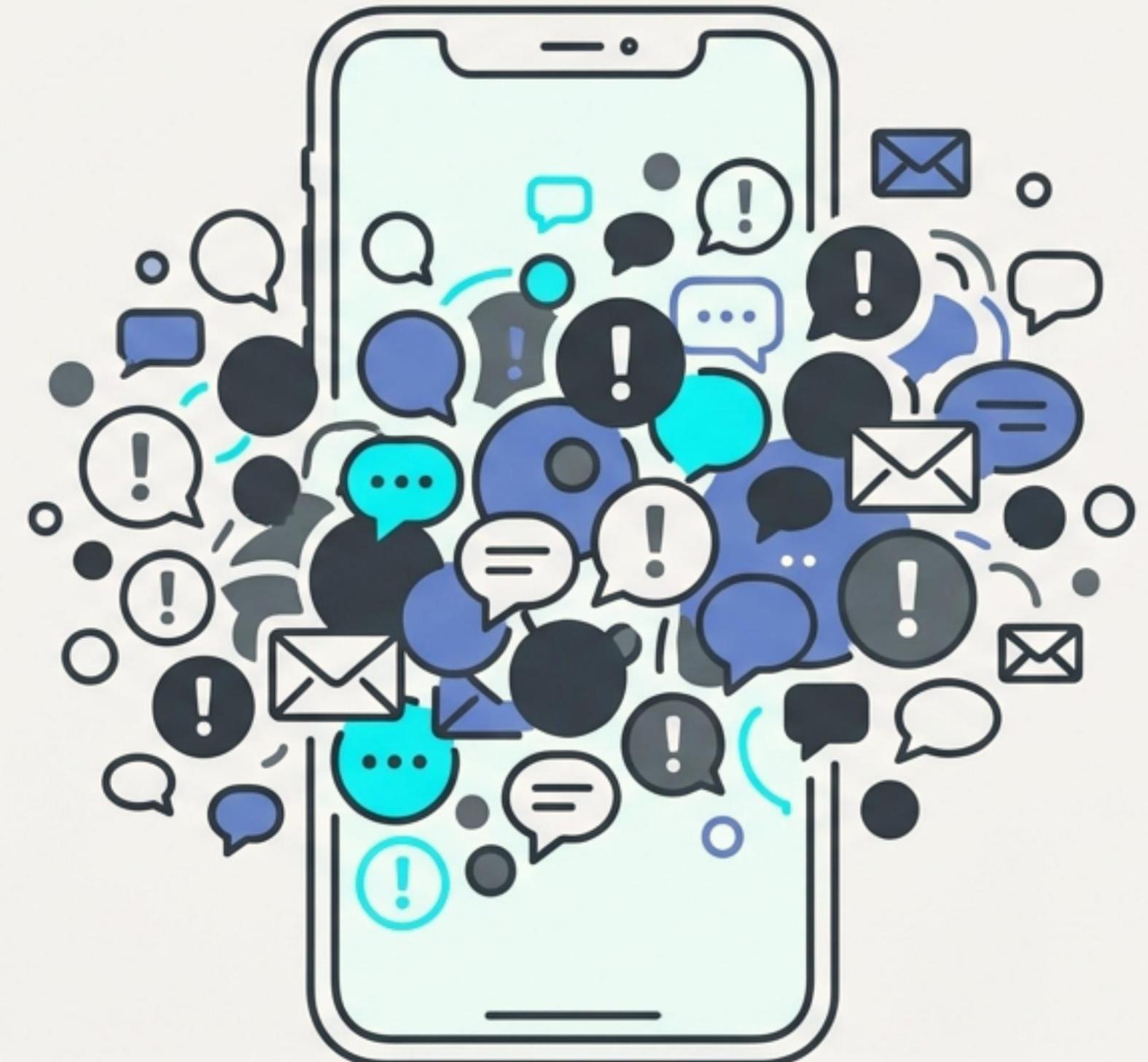
Lumos

Clarity in a World of Deception.

Anderson Yu-Hong Cai , Ming Hung Fan

Every Message is a Judgement Call.

We live in a state of digital alert. Every unexpected text or email forces a difficult choice: **Is this a critical notification or a sophisticated trap?** The fear of being scammed is matched only by the fear of missing something important.

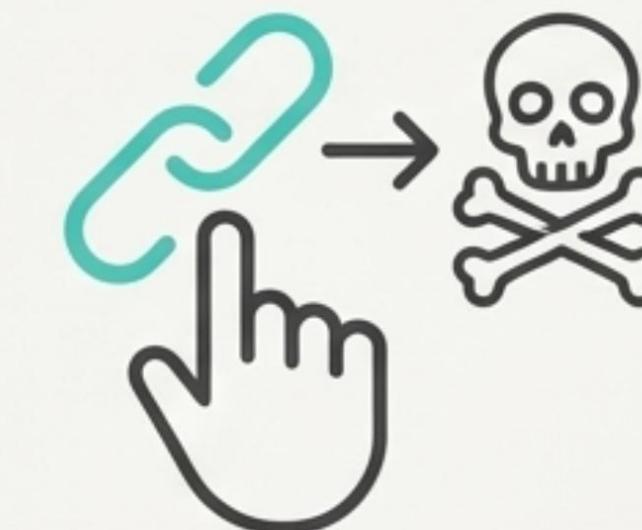


The Cost of Uncertainty: Missed Opportunities vs. Financial Loss

Without an integrated, instant verification tool, users are left guessing. They either ignore potentially legitimate messages (e.g., delivery updates, appointment reminders) or click on malicious links, risking financial and personal data loss.



Missed Opportunity



Financial Loss

Introducing Lumos: Your AI Co-pilot for Digital Trust.

Lumos is a centralized platform that provides instant, AI-powered analysis for suspicious messages and images. It eliminates the guesswork, delivering a clear verdict in seconds.

ADVANCED THREAT DETECTION

Scam Detection System

AI-powered analysis for suspicious messages and images

TEXT ANALYSIS IMAGE ANALYSIS

ENTER SUSPICIOUS MESSAGE

URGENT! Your package is waiting. Click <http://suspicious-site.com> to claim. Contact: 0912345678

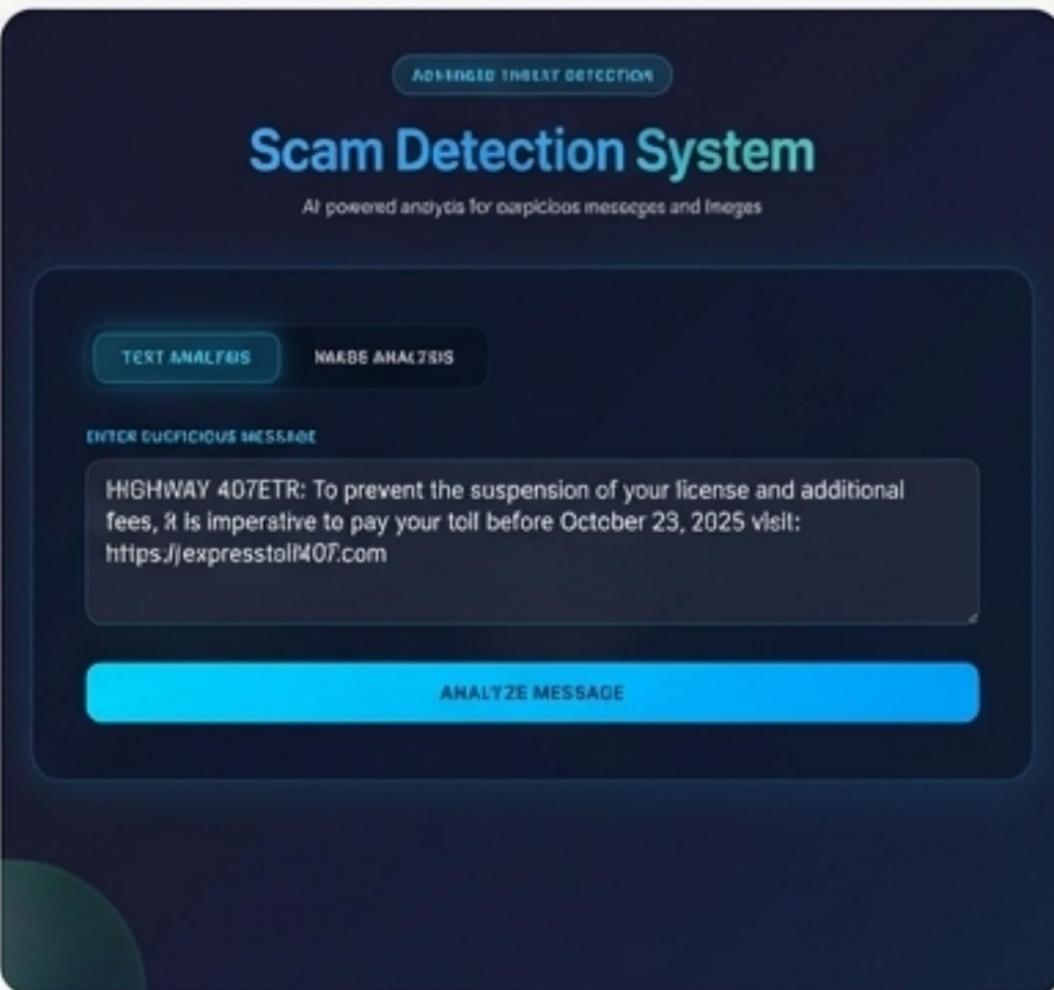
ANALYZE MESSAGE

From Suspicion to Certainty in Three Steps.

Receive



Analyze



Decide



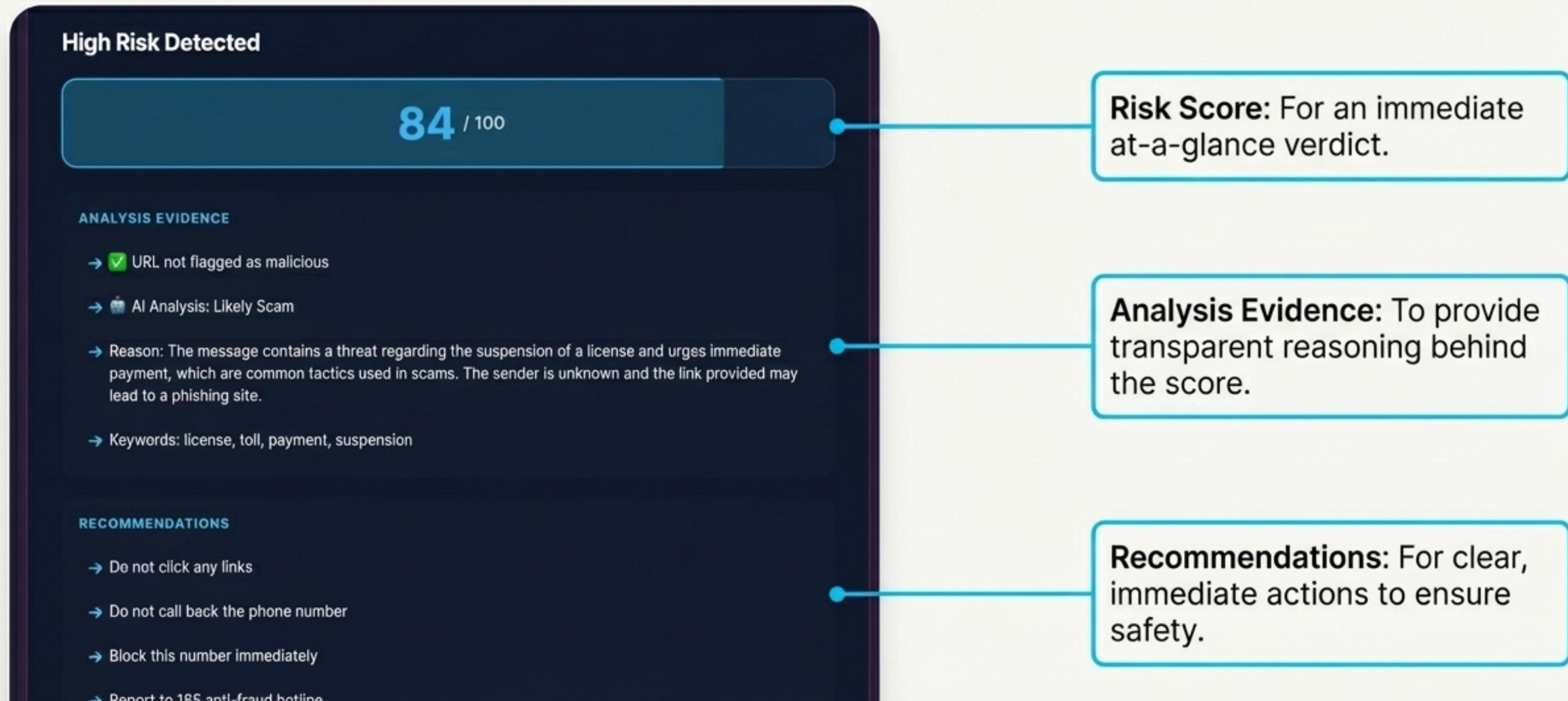
1. A suspicious message arrives.

2. Simply paste the text or upload a screenshot.

3. Receive an instant, actionable analysis.

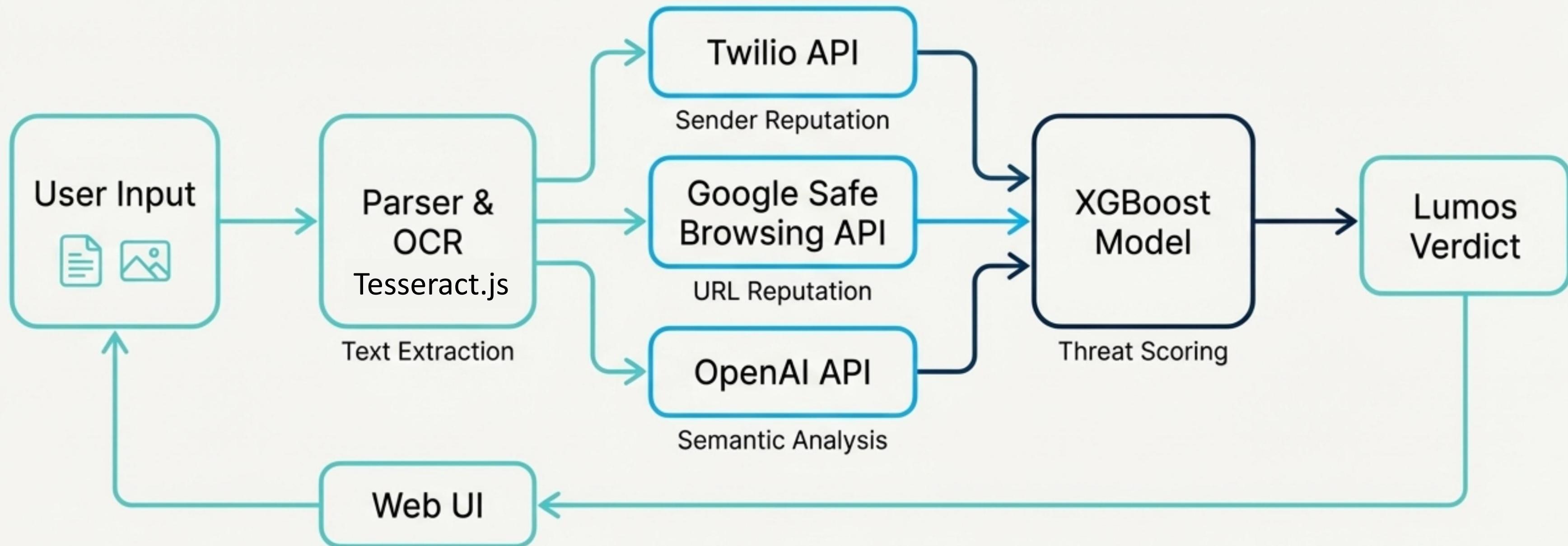
Actionable Intelligence, Not Just a Score.

Lumos deconstructs the threat and provides a clear breakdown of its findings. The goal is to empower the user with transparent reasoning and simple, safe next steps.



A Multi-Layered Intelligence Engine

Lumos integrates multiple specialized services to deconstruct and analyze every component of a potential threat, from sender reputation to semantic intent.



Built with a Robust, Scalable Technology Stack.

Our technology choices prioritize real-time performance, analytical depth, and scalability to handle complex threat detection.

Backend



Node.js

Express

Express.js

Machine Learning & AI



XGBoost



OpenAI

Data Processing



Tesseract.js



Tesseract.js

APIs & Services



Twilio



Google Safe
Browsing

Core Language



JavaScript

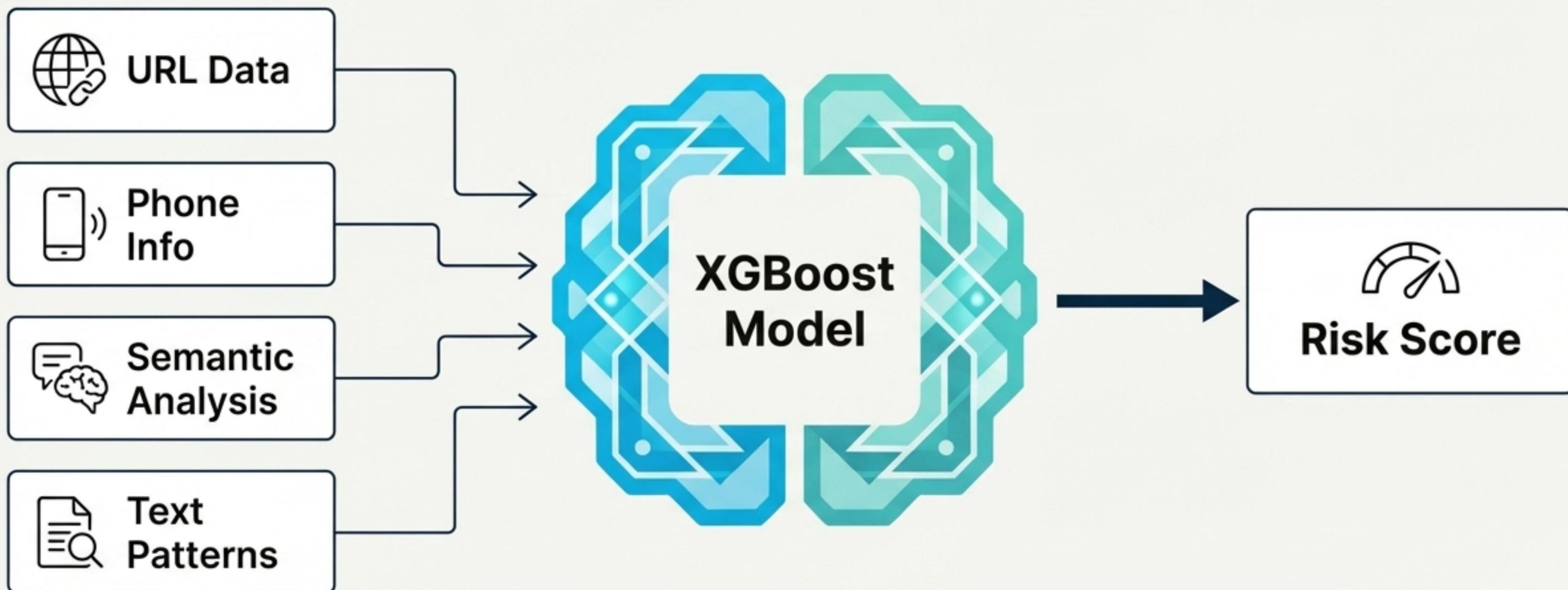
Reading Between the Lines: Tesseract.js for Image Analysis

Many scams are sent as images to evade text-based filters. Lumos uses Tesseract.js to accurately extract and analyze all text, URLs, and phone numbers directly from screenshots, leaving scammers with nowhere to hide.



The Core of Our Insight: The XGBoost Predictive Model.

At the heart of Lumos is a custom-trained XGBoost model. It synthesizes data from all our analysis services to calculate a highly accurate scam probability score, forming the basis of our final verdict.



Deconstructing Deception: 45 Features of Threat Analysis

Our model's accuracy comes from its comprehensive feature set. We analyze far more than just keywords, evaluating a rich combination of technical, linguistic, and structural signals to identify even the most sophisticated threats.



Sender Reputation

- Twilio data
- Phone number type
- International status



Link & URL Analysis

- Google Safe Browsing status
- Domain age
- Presence of suspicious characters
- Shortened URLs



Semantic & Linguistic Analysis

- OpenAI-powered detection of urgency
- Threats
- Grammatical errors
- Spelling mistakes



Structural & Content Patterns

- Excessive capitalization
- Use of special characters
- Message length
- Keyword density

Lumos

-  **Safe.**
-  **Reliable.**
-  **Intelligent.**

Lumos is our first step towards building a safer digital ecosystem. We envision a future with browser extensions, email plug-ins, and real-time APIs to bring instant clarity and trust to all forms of digital communication.

Explore the Code. Join the Mission.



[github.com/AndersonTsaiTW/
HackTheSource_lumos](https://github.com/AndersonTsaiTW/HackTheSource_lumos)



Thank you.