Google Cloud H2S

Gen AI Exchange Hackathon

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Problem Statement : AI Powered Tool for Combating Misinformation

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Brief about the prototype:

Our Mission: Empowering Digital Discernment

1. **A Powerful Defense:** In an era where misinformation spreads faster than truth, our solution provides a robust, AI-powered line of defense against harmful and misleading content.
2. **Beyond Fact-Checking to Education:** We have designed our prototype not just to deliver a verdict, but to educate. By deconstructing the manipulative techniques used in a piece of content, we give users the knowledge to identify fake news on their own.
3. **Fostering a Resilient Digital Citizenry**: Our ultimate goal is to empower users to shift from passive content consumption to active, critical evaluation. We turn every verification into a learning opportunity, fostering a more informed and discerning society.

Misinformation Challenge -> AI-Powered Analysis -> User Empowerment

How 'VERIFACT' Works: A Multi-Layered Verification Engine

1. **Universal Ingestion & Summarization:** The tool accepts all common media formats: text, URLs, images, audio, and video. It uses **advanced OCR** and **transcription** to extract the core message, which a Generative AI model then distills into a concise, 200-character verifiable claim.
2. **Automated Evidence Triangulation:** The core claim is simultaneously cross-referenced against two powerful, independent sources to ensure accuracy:
   a) **Google's Fact Check API** for previously debunked information.
   b) **Tavily's Search API** to scrape and analyze data from over 10 trusted news domains in real-time**.**
3. **AI-Powered Verdict & Explanation:** The collected evidence is fed into our final LLM, which delivers a clear, **color-coded verdict (True, False, Misleading, Unverifiable)**, a "Falsehood Score," and a detailed, easy-to-understand breakdown of the reasoning and sources.

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Opportunity should be able to explain the following:

How different is it from any of the other existing solutions?

	Standard Fact-Checkers	**Our Solution: The Misinformation Toolkit - VERIFACT**
Input:	Text & URL Only	**Multi-Modal Analysis**: Text → URL → Image → Audio → Video
Analysis:	Simple Verdict (True / False)	**Holistic Verdict**: Verdict → Score → Reasoning → Technique Detection
Evidence:	Static Database Check	**Dynamic Engine**: Google Fact-Check API + Real-Time Web Analysis
Goal:	Provide a One-Time Answer	Build **Long-Term** User Resilience & **Digital Literacy**

How will it be able to solve the problem?

We tackle the core drivers of the misinformation crisis by addressing its **speed, format, and the user's vulnerability.**

1. **Neutralizes Viral Content**: By empowering users to instantly analyze memes, screenshots, and video clips, we provide the tools to stop the spread of the most dangerous and fast-moving misinformation.
2. **Breaks the Sharing Cycle**: Our rapid, accessible tool allows users to verify information before they share it, directly interrupting the chain reaction that leads to widespread social unrest and scams.
3. **Creates a More Resilient Public**: Our educational focus builds long-term digital literacy. By teaching users how misinformation works, we reduce their susceptibility to future fake news, creating a more critical and informed citizenry.

USP of the proposed solution

Our Unique Selling Proposition is being the first **Misinformation Education Engine**.
We don't just give you a fish; we **teach** you how to fish. Our tool is a comprehensive, AI-powered toolkit that not only **debunks today's fake news but inoculates users against tomorrow's.**

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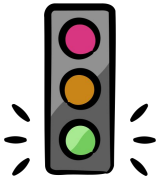
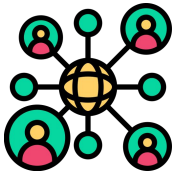
List of features offered by the solution:

Universal Content Analysis Ingests text, URLs, images, audio, and video to find the truth in any format.	**AI-Powered Summarization:** Condenses complex content into a concise, verifiable 200-character claim.	**Dual-Layer Evidence Gathering:** Cross-references claims with Google's API and live web data from trusted sources.
 **Clear Verdict System:** Delivers a simple, color-coded verdict: True, False, or Misleading.	**"Falsehood Score" Indicator:** Provides a 0-100 visual score for at-a-glance credibility assessment.	**In-Depth Reasoning:** Explains the "why" behind the verdict with clear, evidence-backed reasoning.
Misinformation Technique Detection: Uncovers manipulative tactics like Fabrication or Missing Context.	 **Source Transparency:** Displays all consulted sources, giving users the power to verify the verification.	**Secure & Scalable:** Built on Google Cloud with secure authentication for enterprise-ready performance.

Process flow diagram or Use-case diagram

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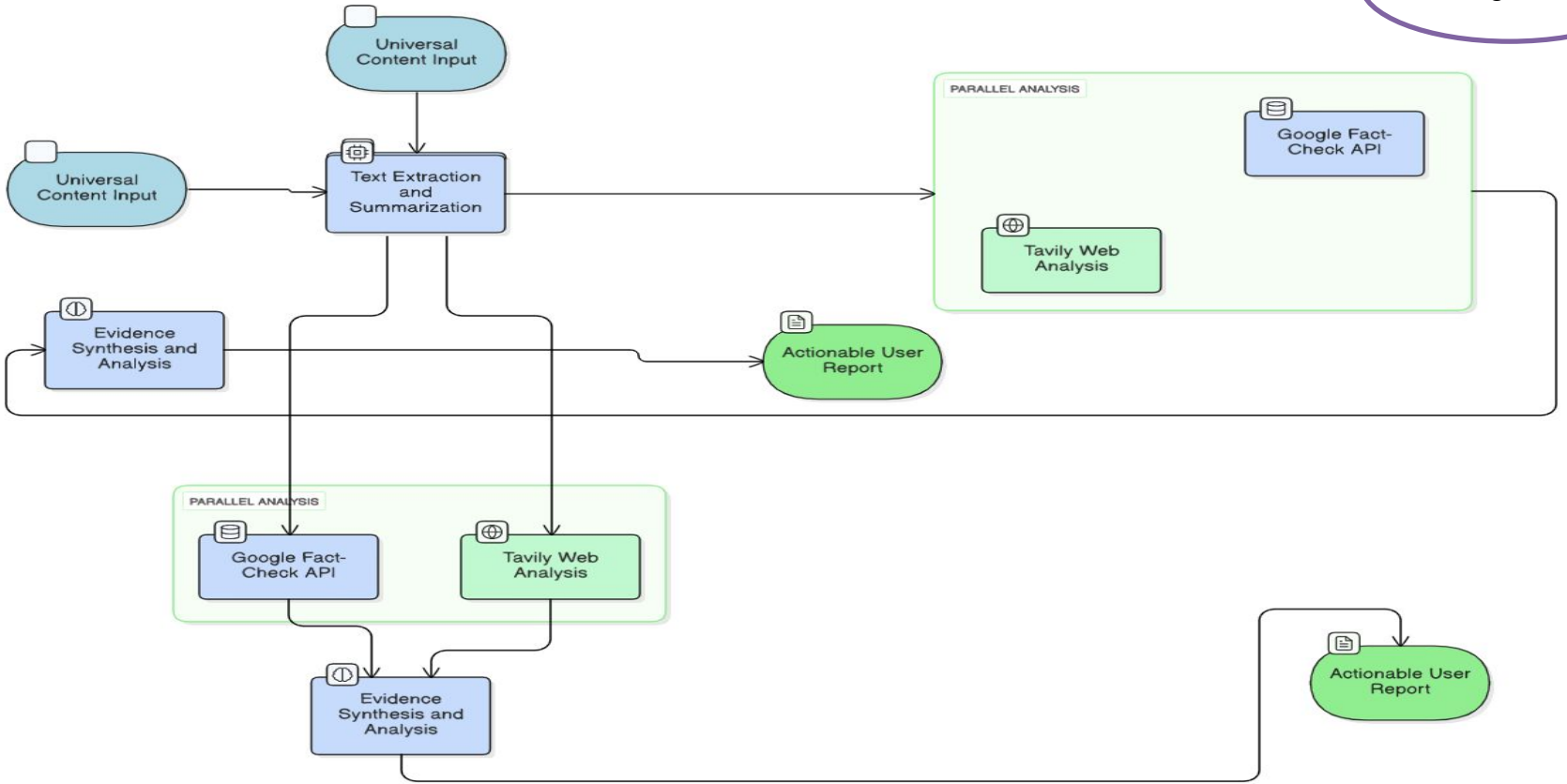
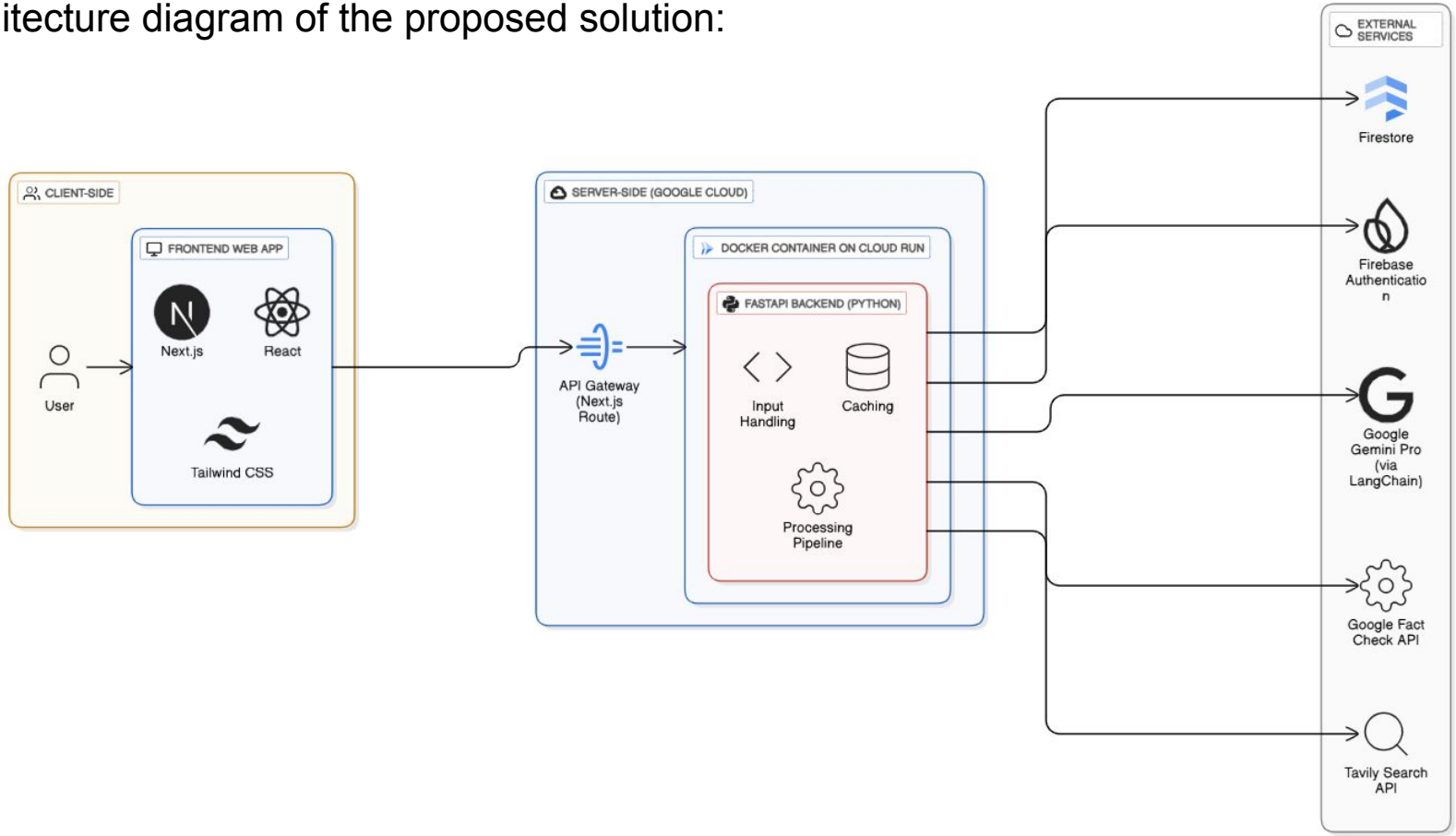


Architecture diagram of the proposed solution:



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Technologies used in the solution

LangChain – Orchestrates LLM workflow for automated fact-check pipeline.

Tavily – Real-time web search for reliable, up-to-date sources.

LLMs (Flash, Gemini 1.5, Gemini) – Fast + deep reasoning for fact verification.

Pillow – Image preprocessing & text extraction from news visuals.

Flask & FastAPI – Backend APIs; FastAPI for performance, Flask for POCs.

Deep Translator + Google Fact Check API – Multilingual news verification with credible sources.

Render – Cloud deployment ensuring scalability & CI/CD.

Next.js – Frontend framework for SEO-friendly, fast user interface.

Tailwind CSS – Utility-first styling for clean & responsive design.

HTML, CSS, JS, TS – Core web technologies ensuring structure, interactivity & type safety.

Node.js – Server-side runtime powering backend services.

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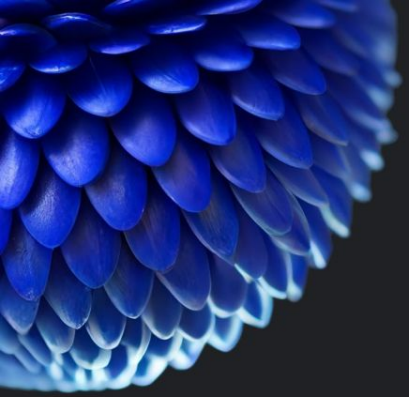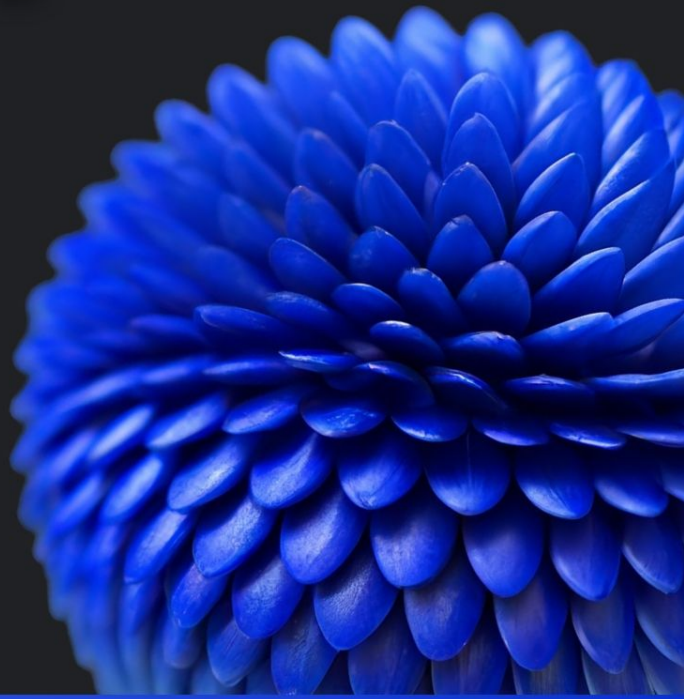
Thank you