

## **GenAI Insurance Risk Intelligence Agent**

This GenAI-powered system is designed to monitor, summarize, and display real-time news insights relevant to the insurance and reinsurance industry. It scrapes recent news articles using a web search API, processes them using GPT, and visualizes the insights in a dashboard.

### **What the Backend Code Does**

#### **1. Web Scraping & Search Query Generation:**

- Uses Tavily to run a search query containing insurance and climate-related keywords (like "climate risk", "loss ratio", "cyber insurance").

#### **2. Text Cleaning & Structuring:**

- Cleans HTML or malformed text.
- Extracts metadata like source domain, date, location, and category based on content keywords.

#### **3. GPT Summarization:**

- Generates structured JSON-formatted summaries using a custom prompt.
- Each article includes fields like title, URL, summary, sentiment, category, location, recommendation, and financial impact.

#### **4. External Research Enrichment:**

- Optionally calls SerpAPI to attach 2-3 related research links to each article.

#### **5. Storage:**

- Uploads the final enriched articles into a BigQuery table named `insurance_news.summary_data`.

## What the Streamlit Dashboard Displays

### 1. Article Explorer:

- Sidebar allows filtering by date range (e.g., Today, Last 12 Hours).
- Clicking on a headline opens the full summary of the article.
- Includes source, category, sentiment, recommendation, and references.

### 2. Analytics Overview:

- **Trending High-Risk Articles:** Shows top 5 articles tagged "High Risk" or "Critical".
- **Sentiment Distribution:** Pie chart of Neutral vs High Risk vs Low Risk articles.
- **Top Risk Categories:** Bar chart of the most common categories (e.g., Insurance, Climate Risk).
- **Severity Map:** Bubble map of affected countries based on the article's sentiment.
- **Analyst Recommendations:** Flags locations with critical severity needing attention.