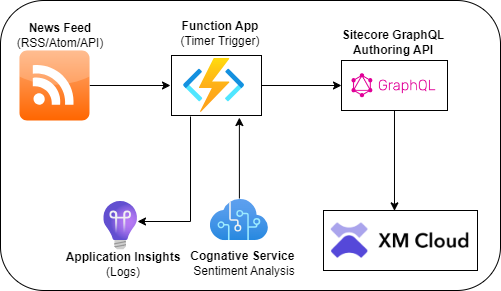
# Automating News Feed Integration into Sitecore XM Cloud with AI-Powered Analysis, Azure Functions, and GraphQL Authoring API

**1. Business Need & Problem Statement**

In today’s fast-paced digital world, businesses must stay updated with real-time news to make informed decisions. However, challenges such as news authenticity, relevant categorization, and sentiment analysis make it difficult to derive meaningful insights from vast amounts of data.

* **Misinformation & Fake News**: With the rise of misinformation, businesses risk making decisions based on unreliable sources.
* **Information Overload**: Manually filtering and categorizing news relevant to the business is time-consuming and inefficient.
* **Understanding Sentiment**: Businesses need to gauge the sentiment of news articles (positive, negative, or neutral) to assess potential impacts.

**2. Proposed Solution**



By leveraging Azure Functions, we have implemented an automated solution that:

* Fetches real-time news from the News API.
* Utilizes AI to assess:
  + **Authenticity**: Detects the credibility of the news source. For this we have used “**Fake-News-Bert-Detect**” AI Model.
  + **Sentiment**: Identifies whether the news is positive, negative, or neutral and we have used sentiment-analysis model which use “**distilbert-base-uncased-finetuned-sst-2-english**” as default model.
  + **Category Relevance**: Maps the news to business-relevant categories for better insights for this we have used “**facebook/bart-large-mnli**” model.

**This solution ensures businesses receive only relevant, credible, and sentiment-aware news, eliminating the manual effort required for news filtering and analysis.**

**3. Business Benefits**

✅ **Improved Decision-Making**: Ensures leadership teams have access to accurate and relevant news.  
✅ **Operational Efficiency**: Automates news filtering, reducing manual effort and saving time.  
✅ **Risk Mitigation**: Identifies potential threats or opportunities based on sentiment and authenticity analysis.  
✅ **Enhanced Business Intelligence**: Enables proactive strategy formulation based on real-time, analyzed news insights.  
✅ **Scalability & Cost Efficiency**: Azure Functions provide a serverless, cost-effective solution that scales with business needs.

**4. Use Cases & Applications**

* **Financial Services**: Identify market trends, stock impacts, and potential risks.
* **Retail & E-commerce**: Track competitor news, customer sentiment, and industry updates.
* **Public Relations & Brand Management**: Monitor media coverage and sentiment around brand perception.
* **Government & Policy Making**: Detect misinformation and assess policy impact through sentiment analysis.

**5. Competitive Advantage**

By integrating AI-driven news analytics, businesses gain a real-time, intelligent, and automated approach to staying ahead of market trends and risks, ensuring they make data-driven decisions faster than competitors.

# Installation Guide

**Prerequisites**

* An active XM Cloud instance with the Authoring API enabled.
* A Client ID and Client Secret readily available to generate an access token for using the Authoring API's mutation queries.
* The GraphQL Authoring API URL should be accessible, e.g., <https://YOUR-XMC-DOMAIN/sitecore/api/authoring/graphql/v1> .
* A News API service for proof-of-concept purposes. We have used this API with an API key: <https://newsapi.org/v2/top-headlines?country=us&apiKey=095392c11b2945928e1d34da0db48c10> .
* An active Azure subscription to create and host the Azure Function for executing the given Python script.
* Python should be installed on your local machine. Testing was conducted on version 3.12.6.

**Steps to Install and run the solution in your local machine:**

* Clone the repository in your local environment from [GitHub](https://github.com/Sitecore-Hackathon/2025-Sitecore-Strikers.git).
* Open the repository in VS Code and if needed install the Python extension.
* Open the terminal and select Git Bash and navigate to the directory “**2025-Sitecore-Strikers/src/newsfeed**”.
* Run the following command: pip install -r requirements.txt
* Update the following variables in the **authoring.py** file.

GRAPHQL\_Authoring\_URL

ACCESS\_TOKEN

* To generate the **ACCESS\_TOKEN** run the below command in the command prompt using your **Client ID** and **Client Secret**.

cmd /c curl --request POST --url "[https://auth.sitecorecloud.io/oauth/token"](https://auth.sitecorecloud.io/oauth/token%22) --header "content-type: application/x-www-form-urlencoded" --data audience=<https://api.sitecorecloud.io> --data grant\_type=client\_credentials --data client\_id={{Client ID}} --data client\_secret={{Client Secret}}

* Now login to your XMC instance and install the following Sitecore package.

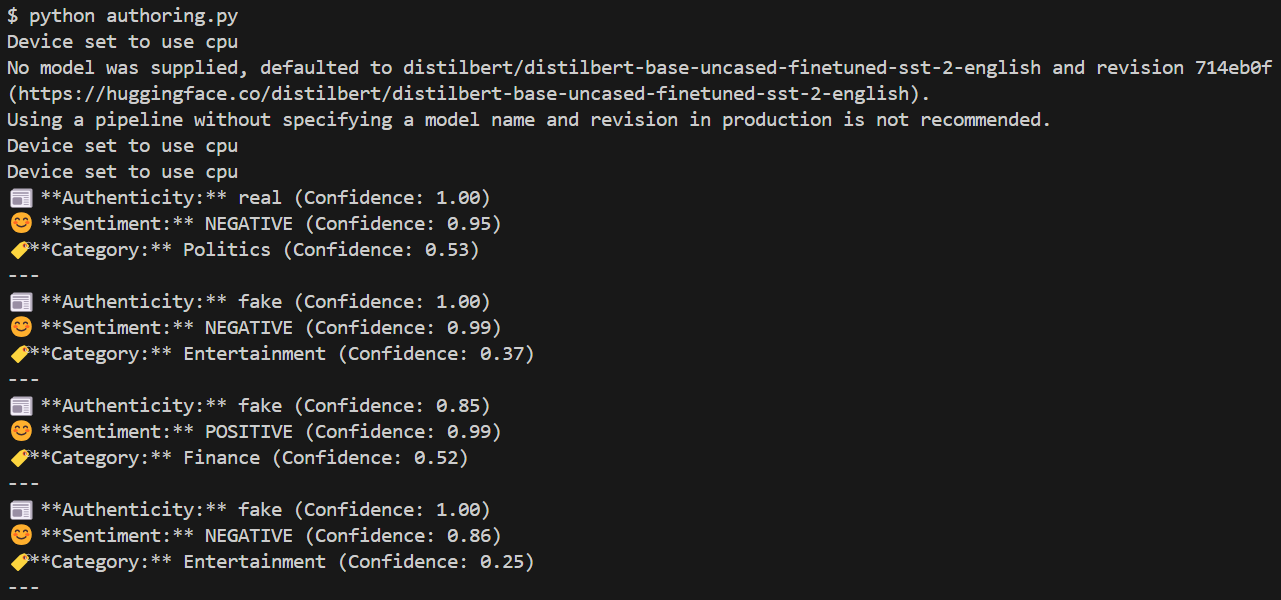


* Now go back to your VS code and run the following command it should push the news articles including AI analysis results in the XMC instance in Home/News folder.

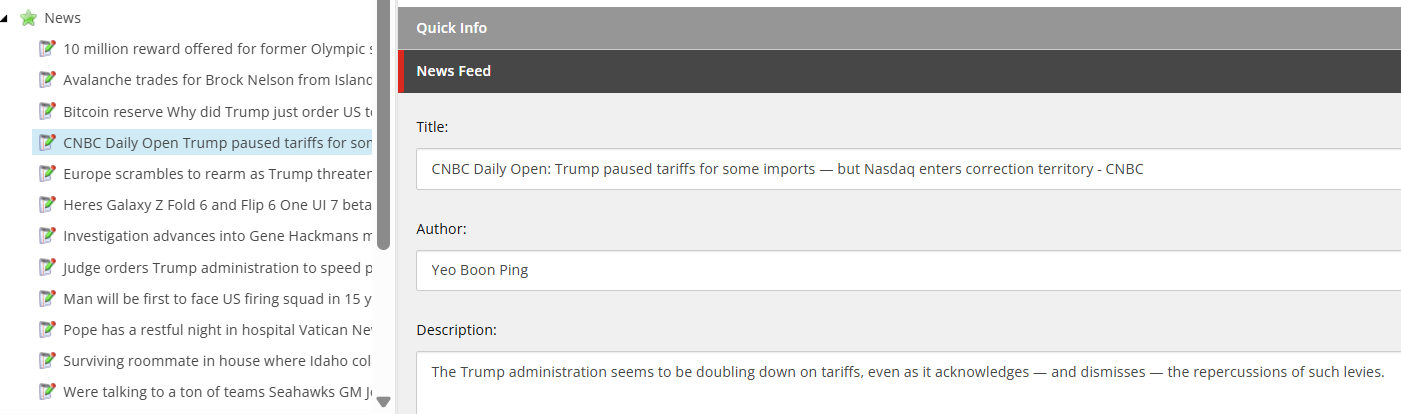
python authoring.py

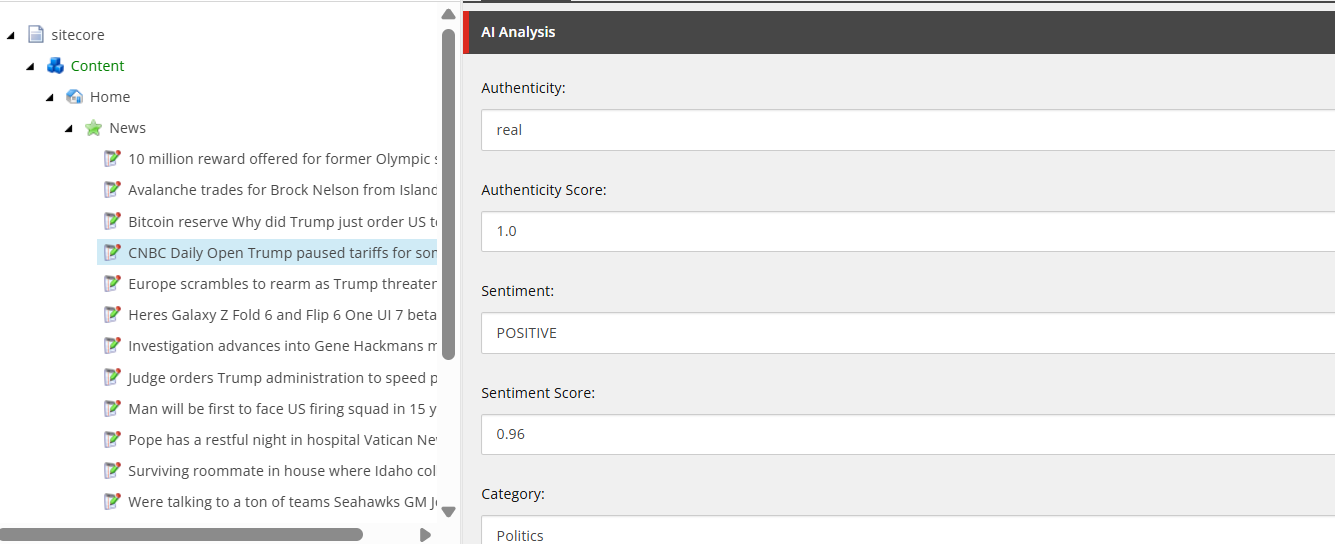
**Note** – First time this script will take some time to install all the required dependencies.

* In the terminal window you should see these logs.

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* In XMC following output is expected once the script is successfully executed.\

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# Potential Enhancements and Advanced Integrations

**Adaptive LLM Model Retraining:**

* Develop a dynamic Large Language Model (LLM) that can learn from content author feedback. Approved corrections of misclassified or inaccurately authenticated content can automatically trigger model retraining, ensuring continual improvement in accuracy.

**Automated Duplicate Detection:**

* Implement advanced duplicate detection algorithms to efficiently identify and manage redundant or similar news content, maintaining content quality and system efficiency.

**AI-Enhanced Search and Filtering:**

* Leverage AI-generated metadata such as sentiment analysis, authenticity scores, and content categories to enhance content discoverability through advanced sorting, filtering, and search capabilities.

These enhancements broaden the solution’s applicability, enabling seamless integration with various headless CMS platforms beyond Sitecore XM Cloud.