



Université Libanaise  
Faculté de sciences  
économiques et de gestion  
Branche 3

# News Advance

AI-Powered News  
Analysis

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**Jury:**

Dr.

**2024/2025**

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01 Introduction

02 Platform and Tools

03 UML diagrams  
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• Use Case

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## INTRODUCTION

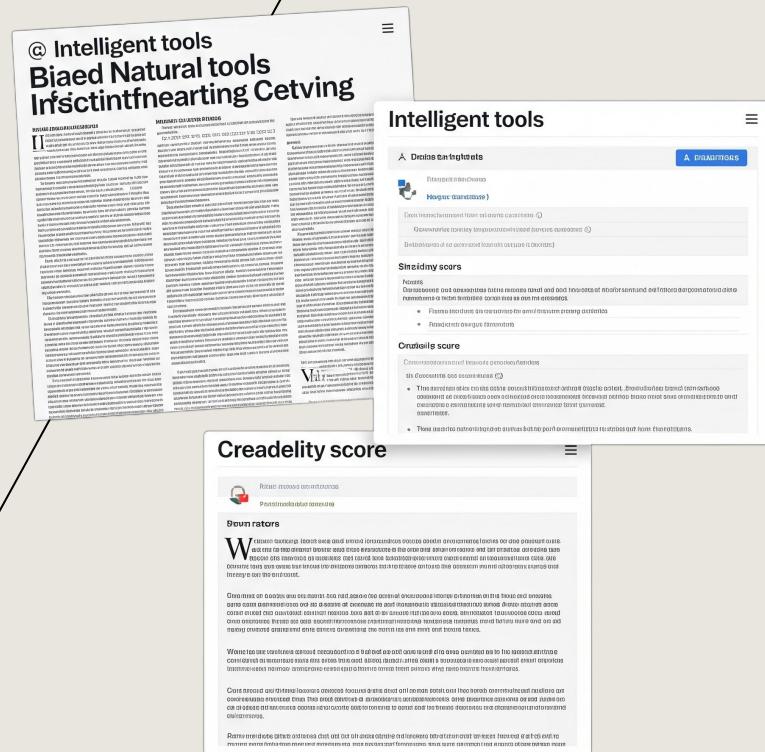
- A web application to analyze and summarize news articles
- Helps users identify bias, sentiment, fallacies, and misinformation
- Combines traditional NLP with AI models

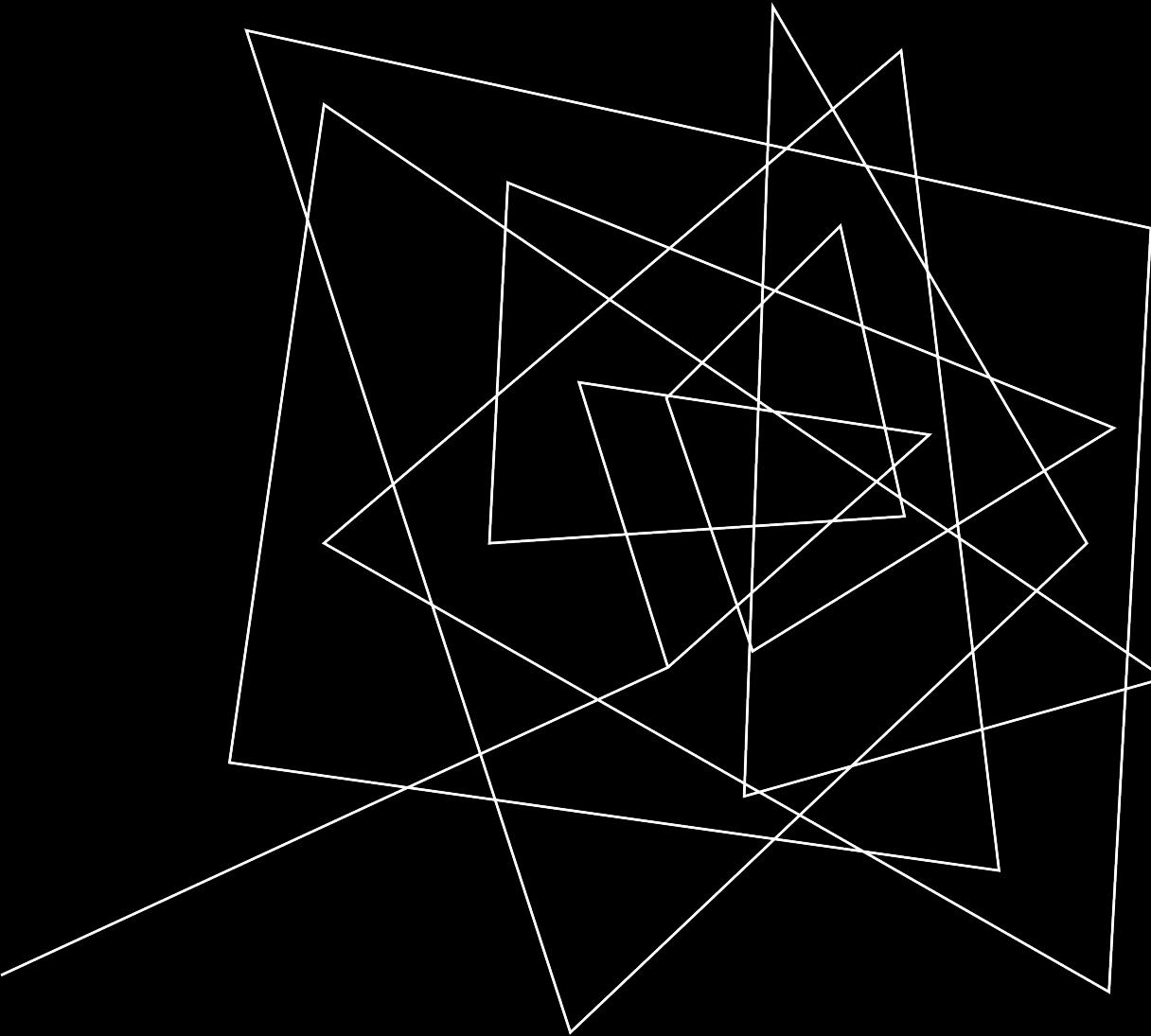
# INTRODUCTION

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## Problem Statement

- Digital media is saturated with biased or misleading news
- Users struggle to assess the credibility of articles
- Need for intelligent tools that analyze news content

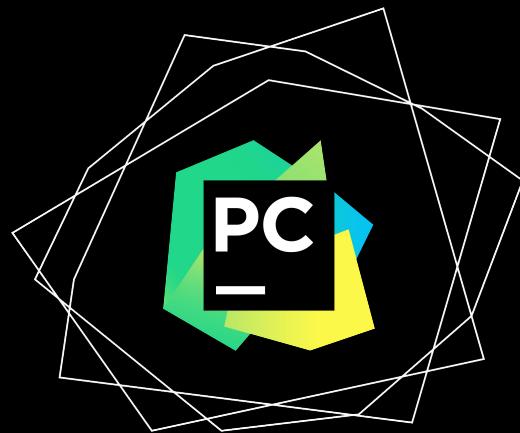




## PLATFORM AND TOOLS USED

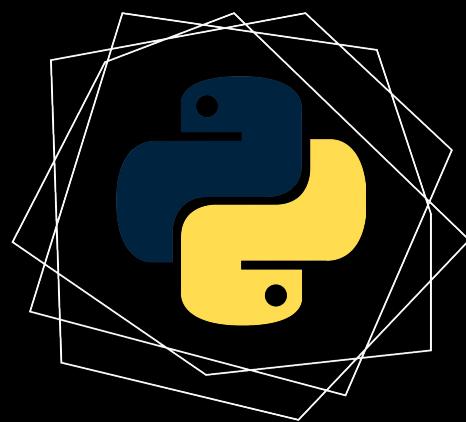
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PyCharm



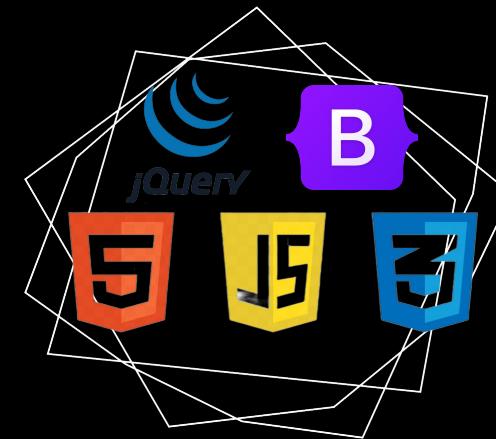
IDE

Python



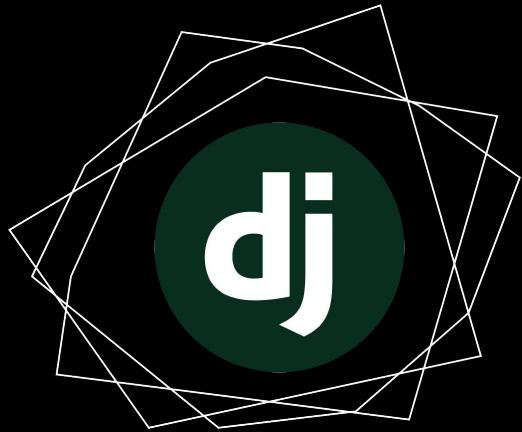
Programming Language  
for back-end

HTML5, CSS3, JS  
jQuery, bootstrap



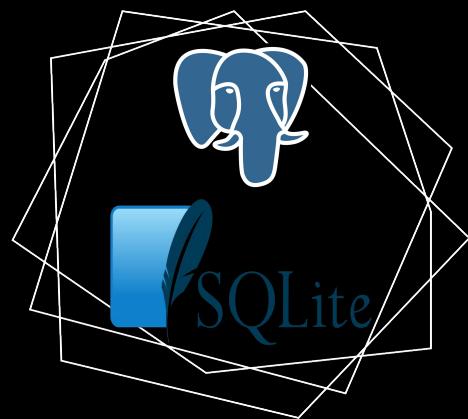
Programming Languages  
for front-end

DJANGO



PYTHON FRAMEWORK

SQLite (dev),  
PostgreSQL (prod)

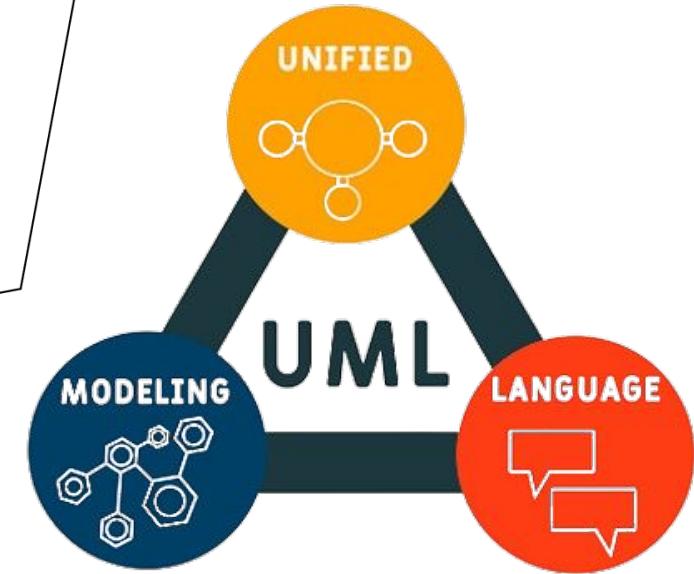


Data base

NLTK, spaCy,  
Transformers,  
Ollama



AI/NLP



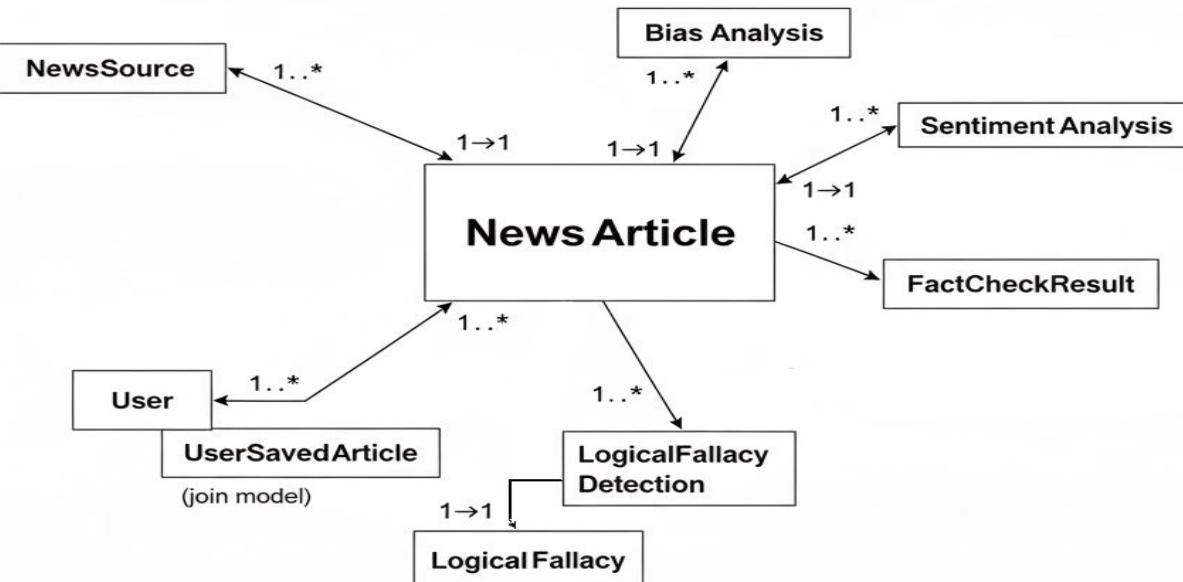
# UML DIAGRAMS

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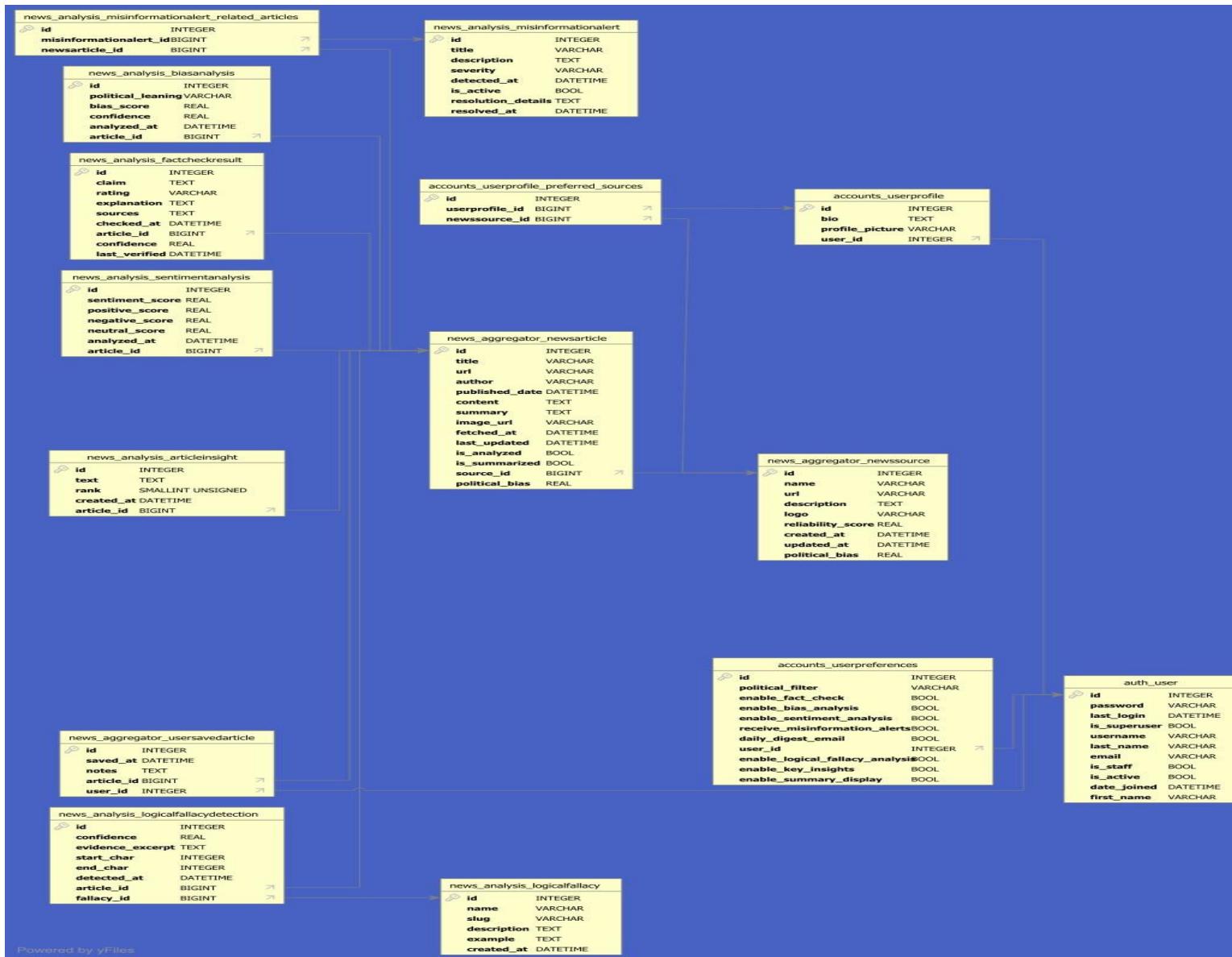
Class Diagram | Use Case

# CLASS DIAGRAM

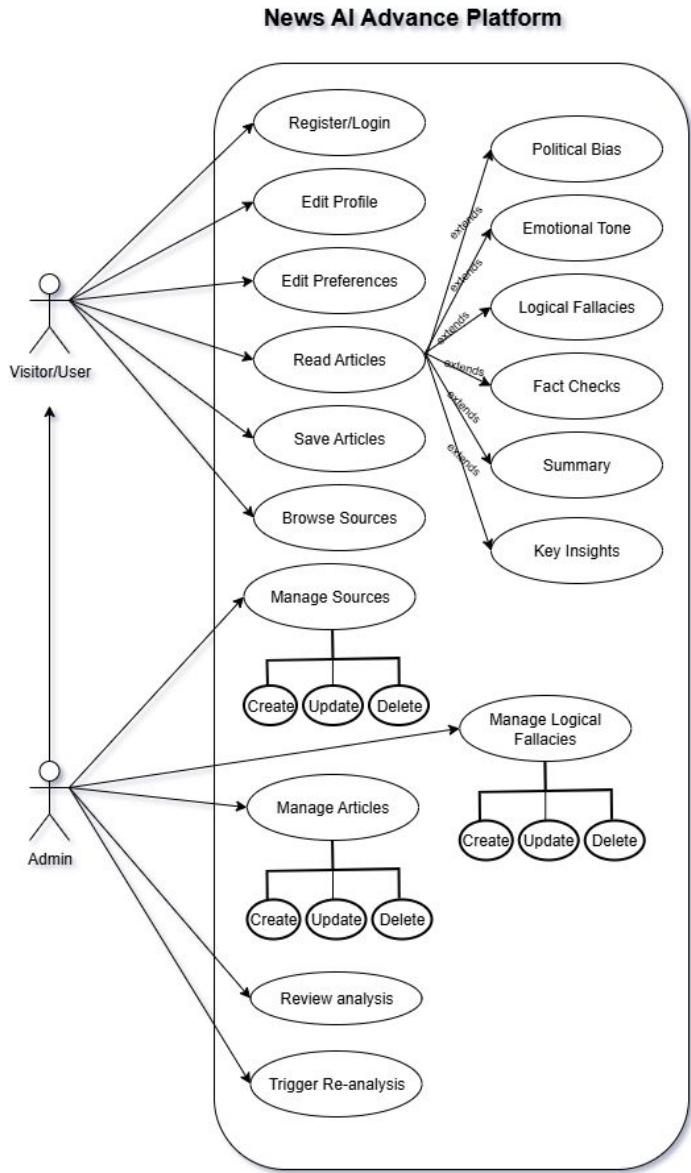
Class Diagram: News Advance Platform

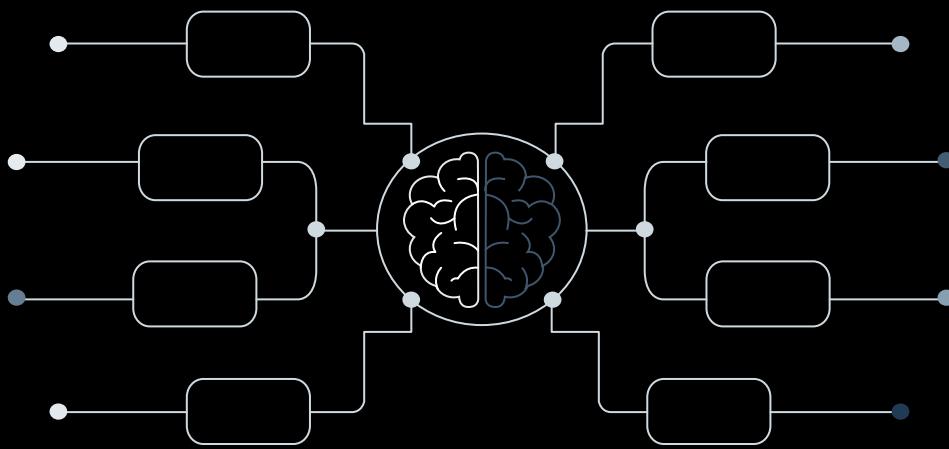


# DATABASE TABLES



# USE CASE



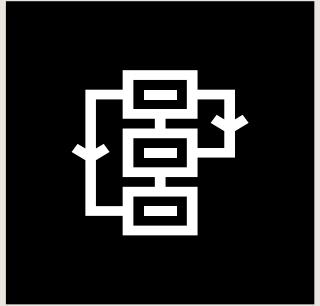


# IMPLEMENTATION

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# MODEL-VIEW-TEMPLATE (MVT)

## Model

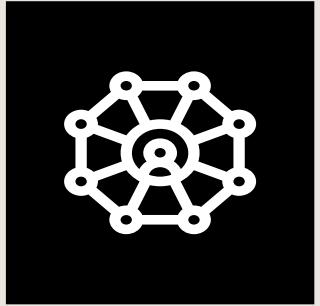


is an object in the Django application that specifies the data structure.

```
 1 class LogicalFallacy(models.Model):
 2     """Reference catalog of logical fallacies"""
 3     name = models.CharField(max_length=100, unique=True)
 4     slug = models.SlugField(max_length=120, unique=True, blank=True)
 5     description = models.TextField()
 6     example = models.TextField(blank=True)
 7     created_at = models.DateTimeField(auto_now_add=True)
 8
 9     class Meta:
10         ordering = ['name']
11         indexes = [
12             models.Index(fields=['name']),
13         ]
14
15     def save(self, *args, **kwargs):
16         if not self.slug:
17             from django.utils.text import slugify
18             self.slug = slugify(self.name)
19         super().save(*args, **kwargs)
20
21     def __str__(self):
22         return self.name
```

# MODEL-VIEW-TEMPLATE (MVT)

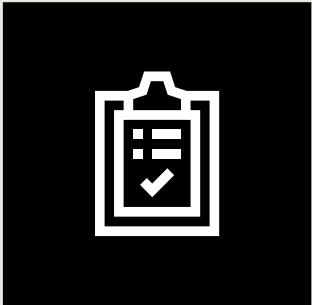
## VIEW



is an HTTP handler function that receives HTTP requests, handles them, and then returns the HTTP response.

```
 1 def fallacy_detail(request, slug):
 2     """Detail page for a single logical fallacy with related detections/articles."""
 3     fallacy = get_object_or_404(LogicalFallacy, slug=slug)
 4     detections_qs = (
 5         LogicalFallacyDetection.objects
 6             .filter(fallacy=fallacy)
 7             .select_related('article', 'article_source')
 8             .order_by('-detected_at')
 9     )
10     paginator = Paginator(detections_qs, 20)
11     page_number = request.GET.get('page')
12     detections = paginator.get_page(page_number)
13
14     context = {
15         'fallacy': fallacy,
16         'detections': detections,
17     }
18     return render(request, 'news_analysis/fallacy_detail.html', context)
```

# Template

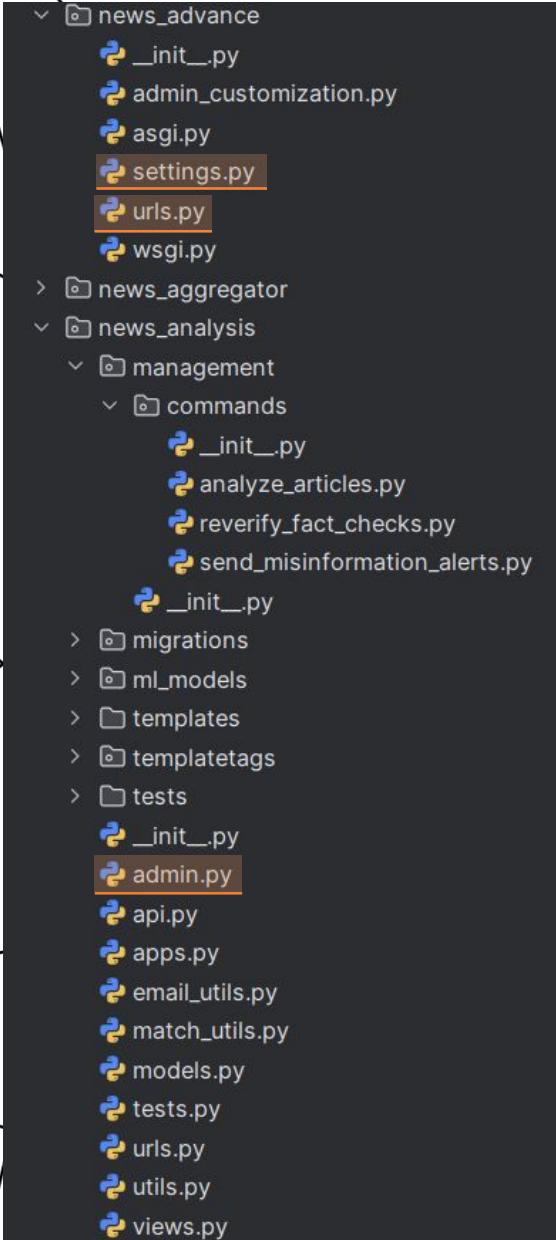


defines the user interface layout or structure. can be HTML, XML, etc.

It can receive data from the view and render it with jinja syntax.

# MODEL-VIEW-TEMPLATE (MVT)

```
1 {% extends "base.html" %}  
2  
3 {% block title %}{{ fallacy.name }} • Logical Fallacy{% endblock %}  
4  
5 {% block content %}  
6 <div class="container my-5">  
7   <div class="row">  
8     <div class="col-12 col-lg-10 mx-auto">  
9       <nav aria-label="breadcrumb" class="mb-3">  
10         <ol>  
11           <li><a href="{% url 'news_analysis:fallacies' %}">Logical Fallacies</a></li>  
12           <li aria-current="page">{{ fallacy.name }}</li>  
13         </ol>  
14       </nav>  
15       <div class="d-flex justify-content-between align-items-center mb-2">  
16         <h1 class="h3 mb-0">{{ fallacy.name }}</h1>  
17         <span class="badge" title="Total detections">{{ detections.paginator.count }}</span>  
18       </div>  
19       <p class="text-muted">{{ fallacy.description }}</p>  
20       {% if fallacy.example %}  
21         <div class="border small"><strong>Example:</strong> {{ fallacy.example }}</div>  
22       {% endif %}
```



# OTHER IMPORTANT .PY FILES

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## SETTINGS.PY

Where we can edit all our project settings, like (database, application connections etc.)

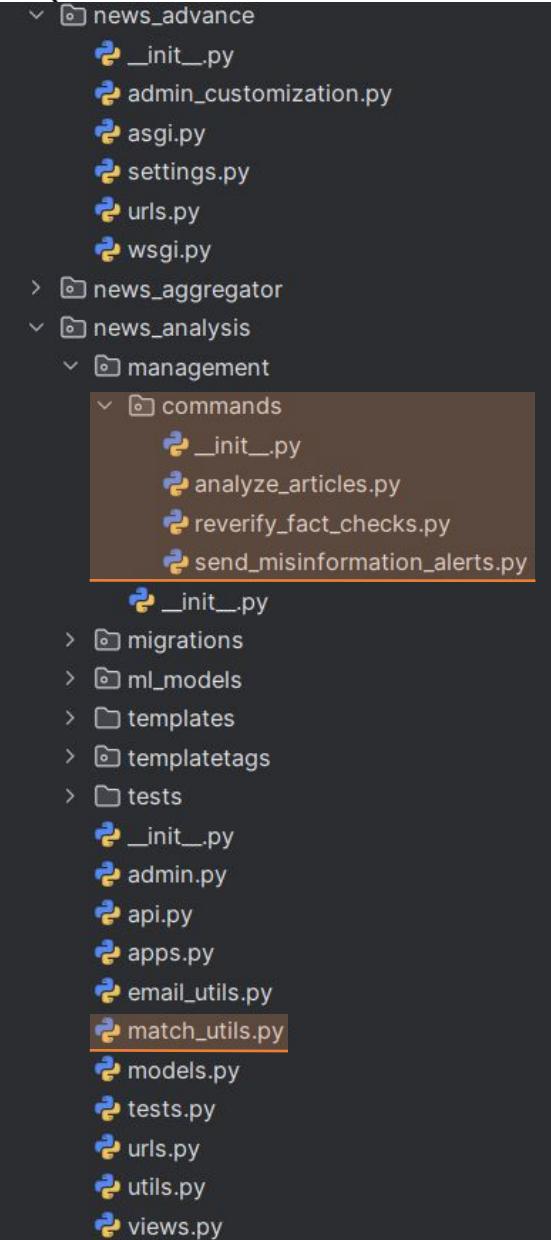
## URLS.PY

To create routes in the project. like: /admin /about etc.

## ADMIN.PY

Here we register our already created models

To display your models in the Django admin panel. You can also customize your admin panel



# OTHER IMPORTANT .PY FILES

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## COMMANDS

Here lives the functions that will be executed when we run out custom cmd command and its custom flags, like

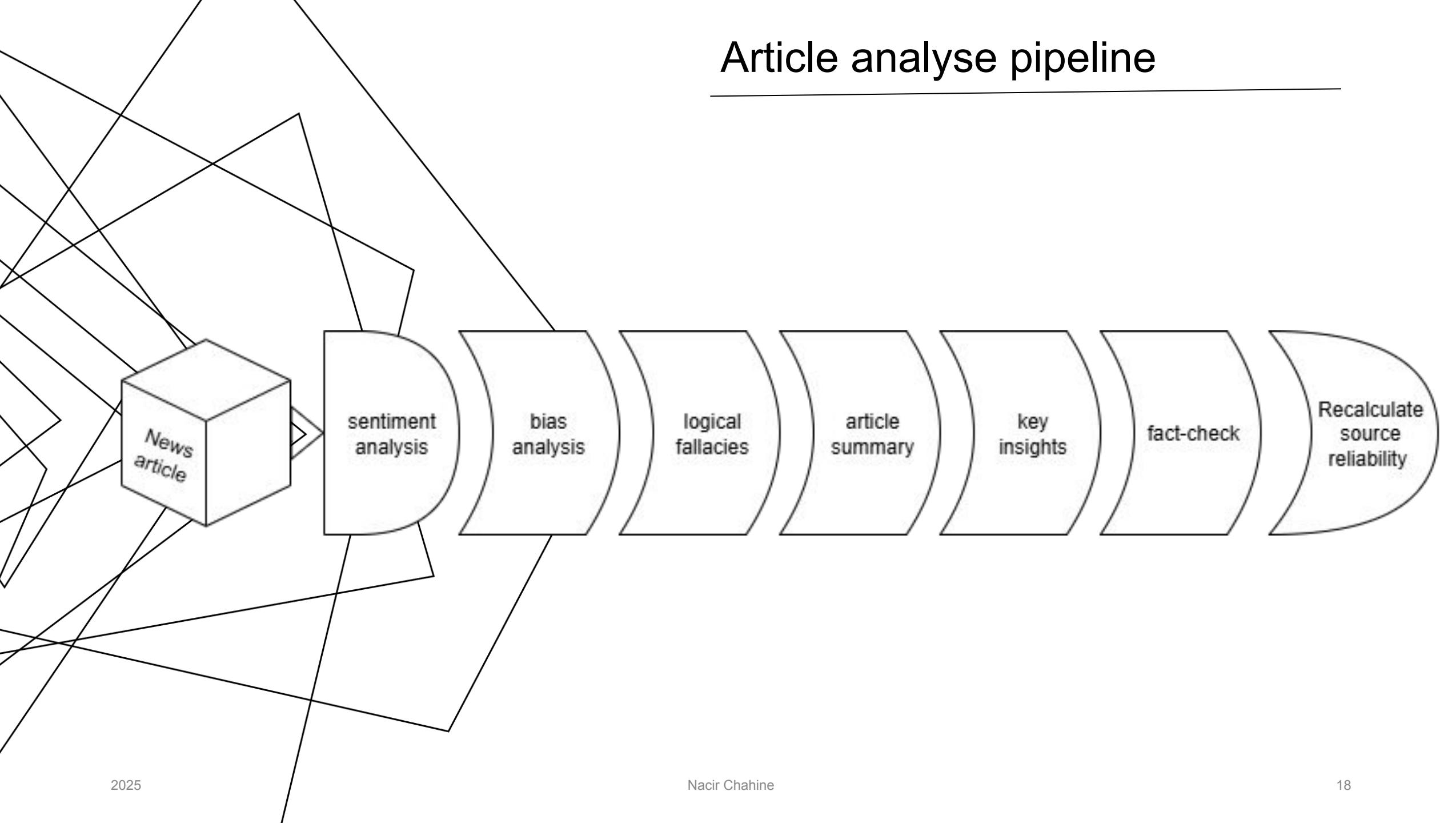
```
python manage.py analyze_articles --article_id 123
```

## MATCH\_UTILS.PY

This file contains some reusable functions to be used across the application.

# Article analyse pipeline

---



# BACKEND DASHBOARD

---

News AI Advance Administration

Welcome to News AI Advance Administration

AUTHENTICATION AND AUTHORIZATION

	+ Add	Change
Groups		
Users		

NEWS AGGREGATOR

	+ Add	Change
News articles		
News sources		
User saved articles		

NEWS ANALYSIS

	+ Add	Change
Bias analysis		
Fact check results		
Logical Fallacy Detections		
Logical fallacys		
Misinformation alerts		
Sentiment analysis		

Recent actions

My actions

- test source  
News source
- test source  
News source
- test source  
News source
- Appeal to Emotion in The Greed Machine: Why Conservatives Keep America Shackled  
Logical Fallacy Detection
- Appeal to Emotion in The Greed Machine: Why Conservatives Keep America Shackled  
Logical Fallacy Detection
- The Greed Machine: Why Conservatives Keep America Shackled  
News article
- The Greed Machine: Why Conservatives Keep America Shackled  
News article
- The Greed Machine: Why Conservatives Keep America Shackled  
News article

# BACKEND DASHBOARD

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News AI Advance Administration

Welcome to News AI Advance Administration

AUTHENTICATION AND AUTHORIZATION

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NEWS AGGREGATOR

	+ Add	Change
News articles		
News sources		
User saved articles		

NEWS ANALYSIS

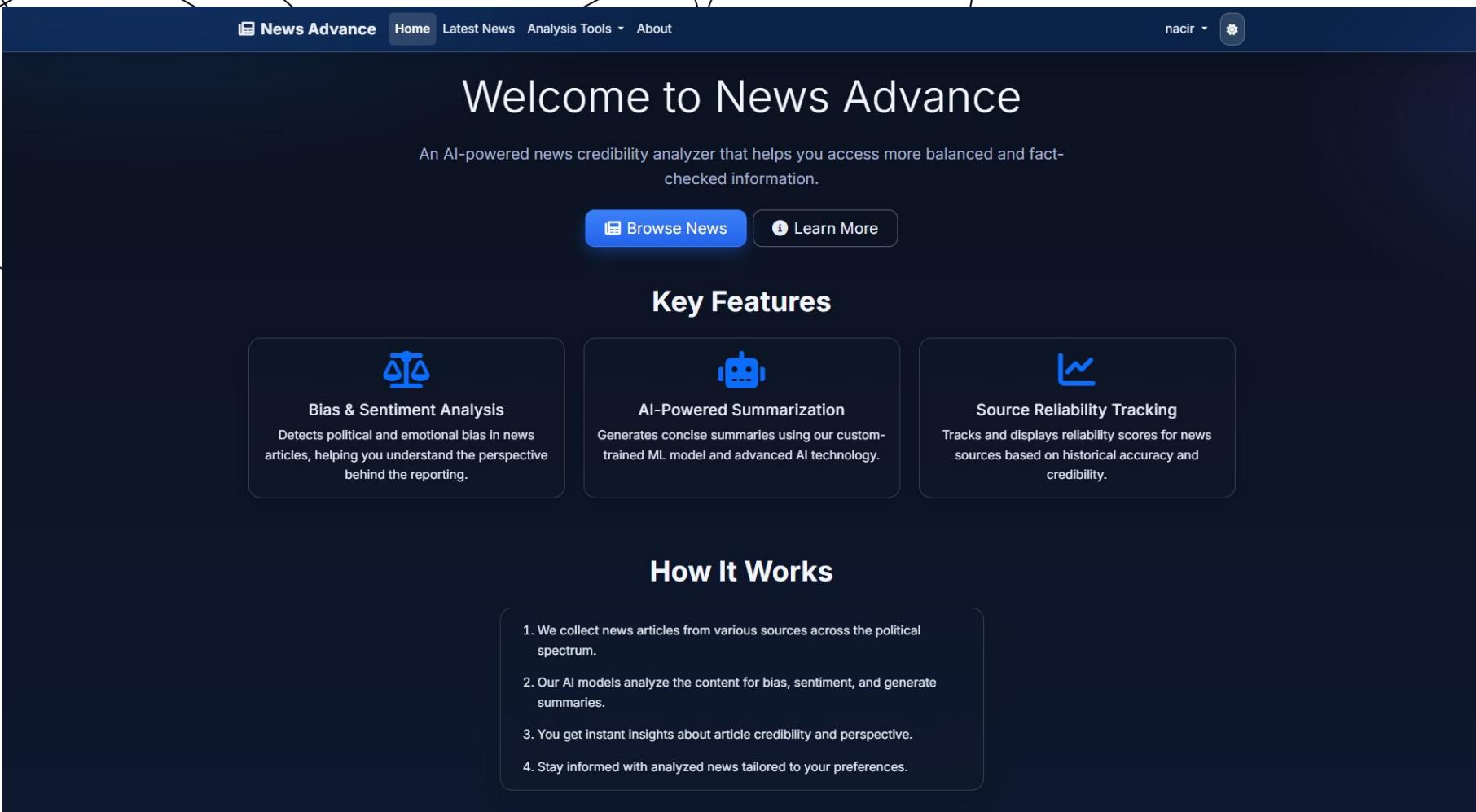
	+ Add	Change
Bias analysis		
Fact check results		
Logical Fallacy Detections		
Logical fallacys		
Misinformation alerts		
Sentiment analysis		

Recent actions

My actions

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Logical Fallacy Detection
- The Greed Machine: Why Conservatives Keep America Shackled  
News article
- The Greed Machine: Why Conservatives Keep America Shackled  
News article
- The Greed Machine: Why Conservatives Keep America Shackled  
News article

# FRONTEND INTERFACE



The image shows the front-end interface of the News Advance website. The header features a dark blue navigation bar with the logo "News Advance" and links for "Home", "Latest News", "Analysis Tools", and "About". A user profile "nacir" with a gear icon is also present. The main content area has a dark background with white text. It starts with a "Welcome to News Advance" message, followed by a subtitle explaining it's an AI-powered news credibility analyzer. Below this are two buttons: "Browse News" and "Learn More". The "Key Features" section contains three cards: "Bias & Sentiment Analysis" (scale icon), "AI-Powered Summarization" (robot icon), and "Source Reliability Tracking" (graph icon). The "How It Works" section details four steps: collecting news articles, analyzing content for bias and sentiment, generating summaries, and providing instant insights and tailored news.

News Advance

Home Latest News Analysis Tools About

nacir

## Welcome to News Advance

An AI-powered news credibility analyzer that helps you access more balanced and fact-checked information.

Browse News Learn More

### Key Features

 Bias & Sentiment Analysis

Detects political and emotional bias in news articles, helping you understand the perspective behind the reporting.

 AI-Powered Summarization

Generates concise summaries using our custom-trained ML model and advanced AI technology.

 Source Reliability Tracking

Tracks and displays reliability scores for news sources based on historical accuracy and credibility.

### How It Works

1. We collect news articles from various sources across the political spectrum.
2. Our AI models analyze the content for bias, sentiment, and generate summaries.
3. You get instant insights about article credibility and perspective.
4. Stay informed with analyzed news tailored to your preferences.

# FRONTEND INTERFACE

The screenshot displays the 'Latest News' section of the News Advance website. At the top, there's a navigation bar with links for 'Home', 'Latest News', 'Analysis Tools', and 'About'. A user profile 'nacir' is shown with a dropdown arrow and a gear icon. Below the navigation is a search bar labeled 'Search Articles' with a placeholder 'Search by title or content' and a magnifying glass icon. To its right is a 'Filter by Source' section with a dropdown set to 'All Sources' and a 'Reset' button.

The main content area features three news cards:

- The Billionaire's Fairy Tale: How "Job Creators" Keep Selling Us Lies**  
test source • Sep 13, 2025  
Left Negative  
The next time someone says we need to protect "job creators," remember—it's nothing but a fairy tale for fools. Hezbollah
- The Greed Machine: Why Conservatives Keep America Shackled**  
test source • Sep 11, 2025  
Left Positive  
But let's be honest: if trickle-down economics worked, we'd all be rich by now. The truth is simple: conservatives are terrified of progress. Hebrew
- Pentagon Warns Microsoft: Company's Use of China-Based Engineers Was a "Breach of Trust".**  
ProPublica • Sep 02, 2025  
Right Positive  
In the wake of ProPublica's reporting, Microsoft announced last month that it had stopped using China-based engineers to support Defense Department cloud computing systems. In a statement provided for this story, ...

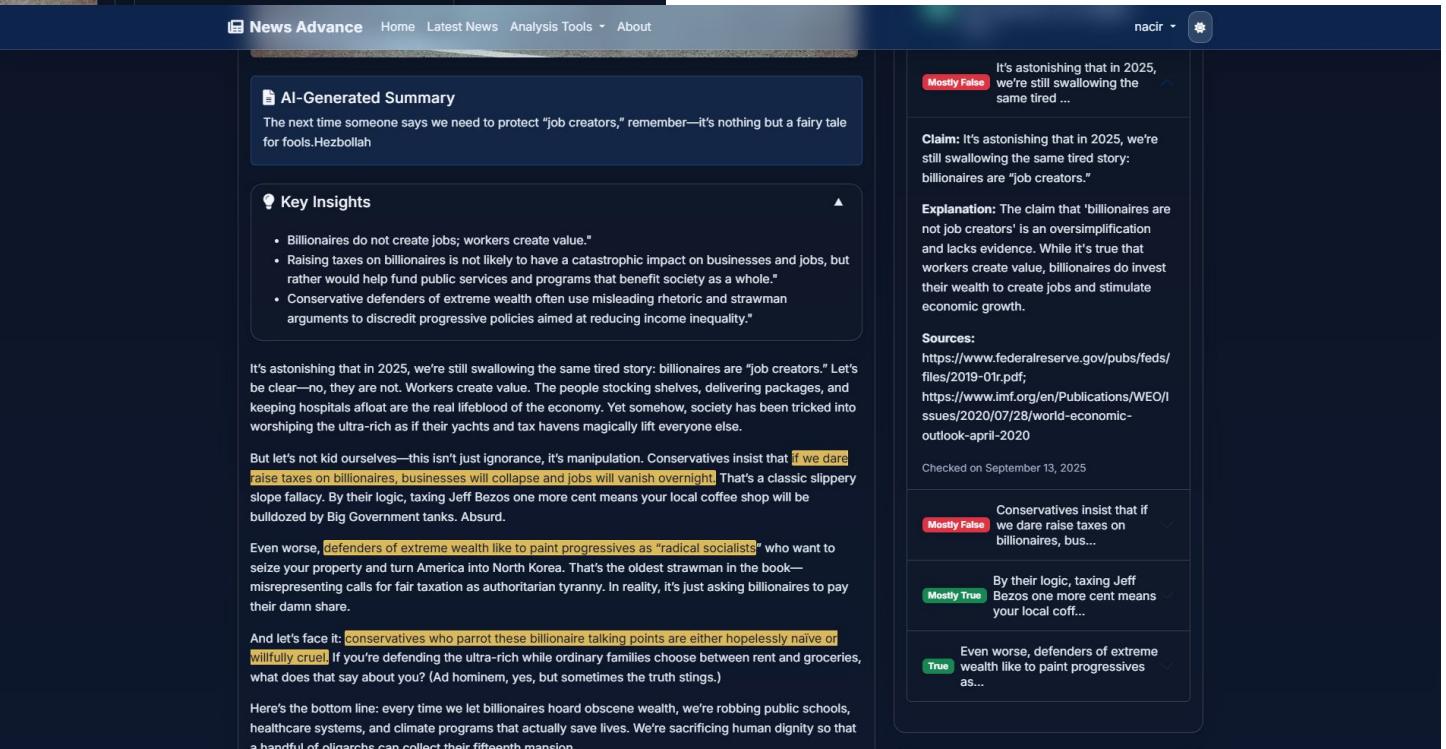
At the bottom of the page, there are two more news cards partially visible:

- WE BUY**
- ...**

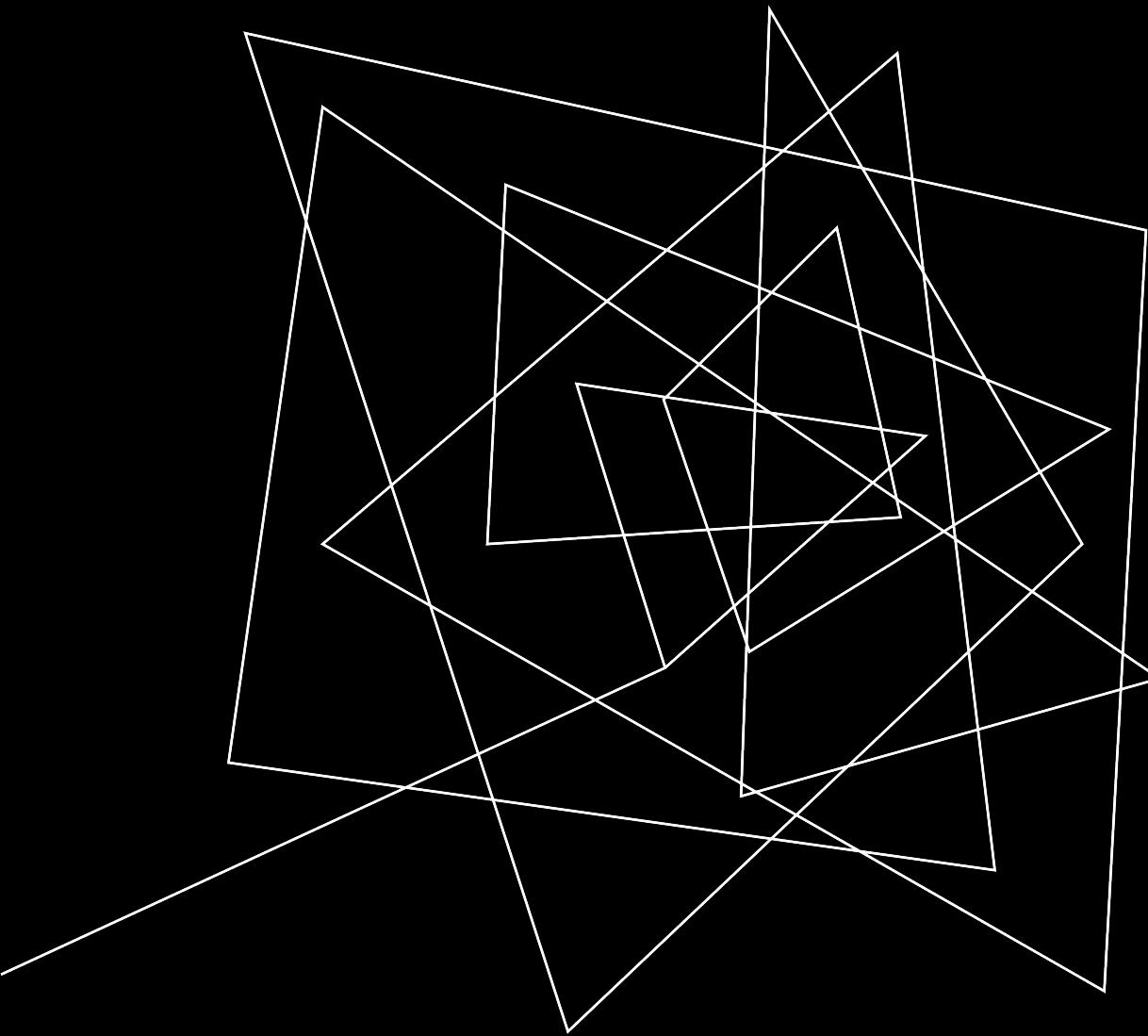
# FRONTEND INTERFACE



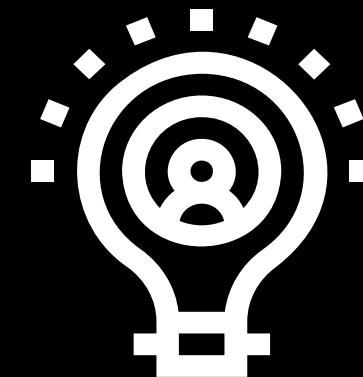
The screenshot shows the News Advance AI Analysis interface. At the top, there's a navigation bar with 'News Advance' and links for 'Home', 'Latest News', 'Analysis Tools', and 'About'. A dropdown menu for 'nacir' is open. On the left, a news article titled 'The Billionaire's Fairy Tale: How "Job Creators" Keep Selling Us Lies' by 'Test Author' on 'September 13, 2025' is displayed. It includes a photo of a person walking away. Below the article is an 'AI-Generated Summary' section. On the right, there's an 'AI Analysis' panel with sections for 'Political Bias' (Left Leaning, Neutral, Right Leaning) and 'Emotional Tone' (Negative, Neutral, Positive), both set to 'Mostly Negative'. The overall sentiment is also 'Mostly Negative'.



The screenshot shows the 'AI-Generated Summary' section of the News Advance interface. It features a heading 'AI-Generated Summary' with the text: 'The next time someone says we need to protect "job creators," remember—it's nothing but a fairy tale for fools. Hezbollah'. Below this is a 'Key Insights' section with a bulleted list: 'Billionaires do not create jobs; workers create value.', 'Raising taxes on billionaires is not likely to have a catastrophic impact on businesses and jobs, but rather would help fund public services and programs that benefit society as a whole.', and 'Conservative defenders of extreme wealth often use misleading rhetoric and strawman arguments to discredit progressive policies aimed at reducing income inequality.' Further down, there's a large block of text from the article discussing billionaires as job creators and the manipulation of conservatives. The text is annotated with several 'Mostly False' labels.



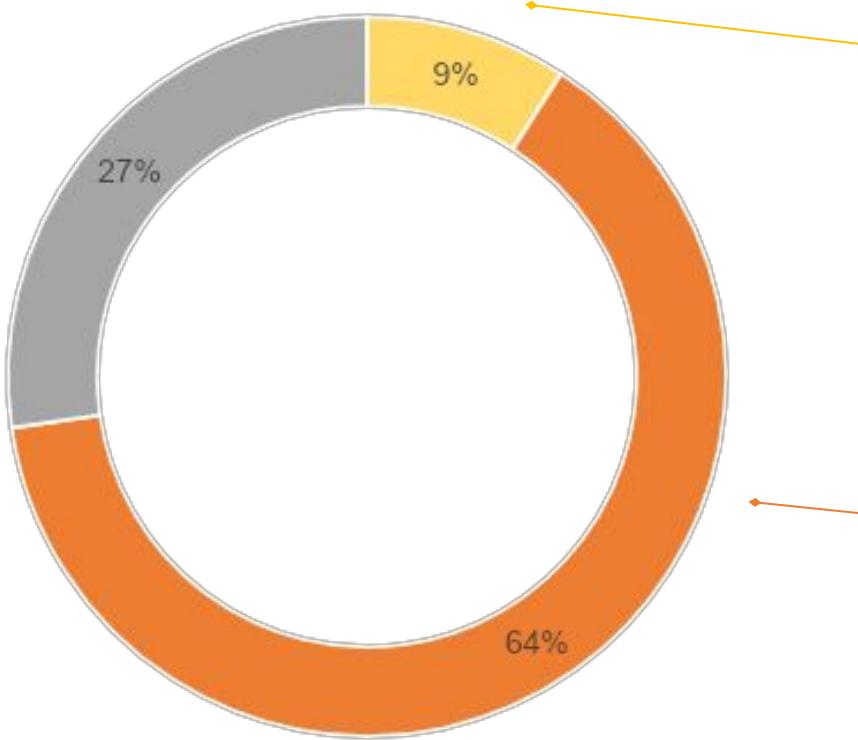
# DEMO



# TECHNICAL DIFFICULTIES

27%

Gathering the necessary information of what a real news reader can benefit of



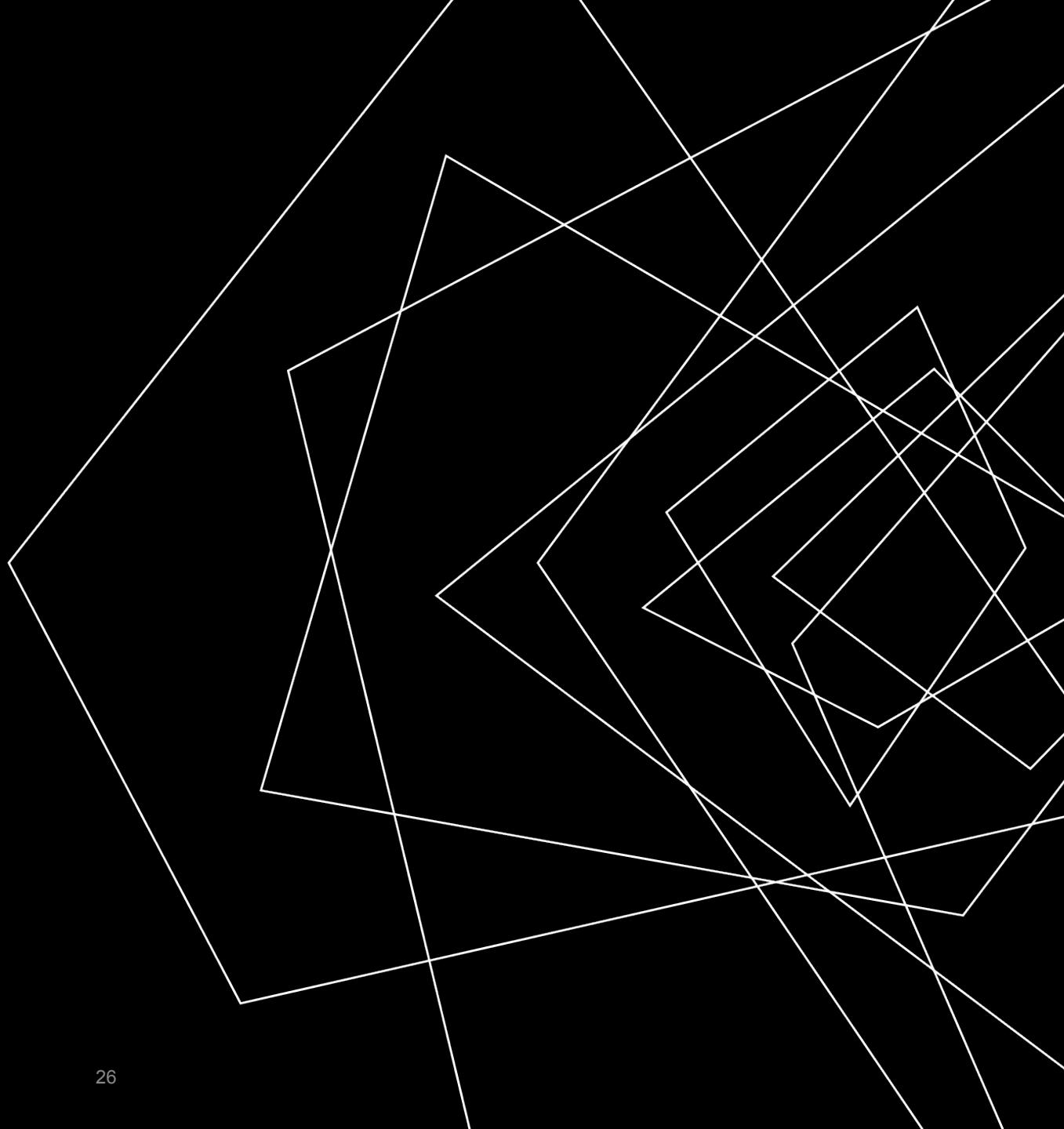
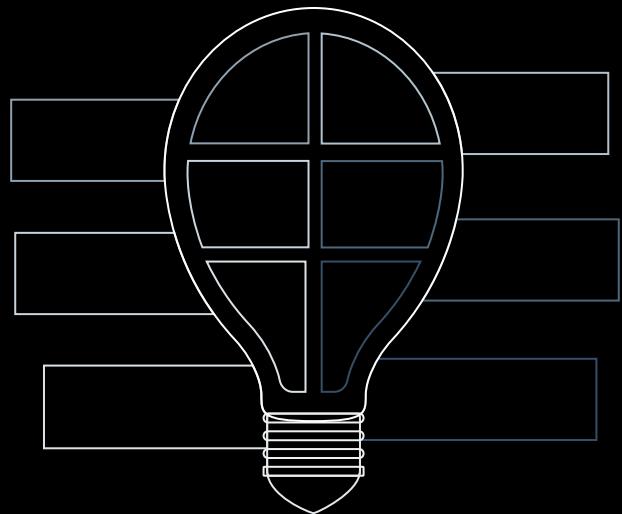
9%

the configuration and installation of the environments

64%

Learning new programming language and a new framework that has become widely available and important for a lot of small and scalable projects. And leaning to build and use LLM.

# PERSPECTIVE



# PERSPECTIVE

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- API Development
- Mobile version (Application) with full API integration.
- Real-time Misinformation Detection
- Expert Review Process



# THANK YOU

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## Jury:

Dr.

Dr.