Source Code Documentation

Overview

This documentation provides detailed descriptions of the classes and functions within the source code for generating AI and ML use cases tailored to a specific company and industry. The application is built using Streamlit for the user interface and utilizes an external API for data retrieval.

ResearchAgent Class

Description

The ‘ResearchAgent‘ class is responsible for fetching industry-specific information about AI applications for a given company. It interacts with an external API to retrieve this information based on user inputs.

Attributes

- api_key (str): The API key required for authenticating requests to the external API.

Methods

‘__init__(api_key)‘

- Parameters:
  - ‘api_key (str)‘: The API key used for authentication with the external search API.
- Functionality: Initializes the ‘ResearchAgent‘ with the specified API key.

‘search_company_info(company_name, industry)‘

- Parameters:
  - ‘company_name (str)‘: The name of the company for which AI applications are being researched.
  - ‘industry (str)‘: The industry in which the company operates.
- Returns:
  - ‘dict‘: JSON data containing information about AI applications in the specified industry if the request is successful.
  - ‘None‘: If the request fails, an error message is displayed through the Streamlit interface.

UseCaseAgent Class

Description

The ‘UseCaseAgent‘ class generates a variety of AI use cases based on the information retrieved about a company and selected focus areas. It provides structured use case outputs that can be displayed to the user.

Methods

‘generate_use_cases(company_info, company_name, focus_areas=None)‘

- Parameters:
  - ‘company_info (dict)‘: The industry information retrieved from the external API.
  - ‘company_name (str)‘: The name of the company for which use cases are generated.
  - ‘focus_areas (list, optional)‘: A list of focus areas (e.g., customer experience, supply chain). If not provided, defaults to a preset list of focus areas.
- Returns:
  - ‘list‘: A list of dictionaries, where each dictionary represents an AI use case containing a title, objective, application description, and associated benefits.

Streamlit Interface (main function)

Description

The ‘main‘ function serves as the entry point to the Streamlit application. It manages user interactions, collects input data, invokes the appropriate classes to generate use cases, and displays the results.

Workflow

1. User Input:
   - Prompts the user to enter the API key, company name, and industry name.
   - Allows the selection of multiple focus areas relevant to the company’s needs.

2. Generate Report:
   - On clicking the "Generate Report" button, it checks for valid user inputs.
   - Instantiates the ‘ResearchAgent‘ and retrieves company-specific information using the provided API key.
   - If successful, it invokes the ‘UseCaseAgent‘ to generate tailored use cases based on the company information and user-selected focus areas.
   - Displays the generated use cases in a structured format on the Streamlit interface.

3. Error Handling:
   - Displays error messages for missing input fields or issues with API requests, ensuring a smooth user experience.

External API Documentation

Description

The application interacts with an external search API to gather industry-specific data related to AI applications.

API Specifications

- Endpoint: ‘https://google.serper.dev/search‘
- Method: ‘POST‘
- Headers:
  - ‘X-API-KEY‘: Authentication key.
  - ‘Content-Type‘: ‘application/json‘
- Payload Structure:
  - Contains a single query parameter structured to ask for AI applications related to a specific company in its industry.

Output Structure

The application outputs a list of AI use cases structured as follows:

- Use Case Title: A brief title describing the use case.
- Objective: The goal of implementing the use case within the company.
- Application: A description of how the use case applies to the company in the context of the industry.
- Benefits: A list of key advantages resulting from the implementation of the use case.