

# Multiagent Industry Insight Generator

Github: <https://github.com/SHARATH353/Multiagent-Industry-Insight-Generator>

## 1. Introduction

The project implements a Multi-Agent System to perform market research, analyze industry trends, generate AI/GenAI use cases, and collect relevant datasets for any given company or industry. It focuses on enhancing operational efficiency and customer experience through AI-driven solutions.

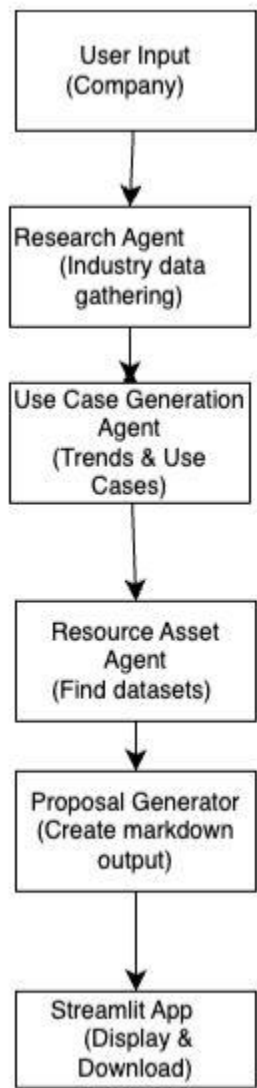
## 2. System Architecture

The architecture follows a linear multi-agent workflow:

- **Research Agent:**
  - Gathers company/industry details using Serper API and web scraping.
  - Identifies key offerings and strategic focus areas.
- **Use Case Generation Agent:**
  - Analyzes AI/ML/GenAI trends using industry insights from McKinsey, Deloitte, Nexocode, and others.
  - Proposes 5 relevant AI/GenAI use cases aligned with operational goals.
- **Resource Asset Collection Agent:**
  - Finds starter datasets from Kaggle and HuggingFace corresponding to each use case.
- **Proposal Generator:**
  - Compiles all outputs into a professional Markdown proposal file.

- Includes clickable dataset links for ease of access.
- **Streamlit Web App:**
  - Provides a user-friendly UI for entering company names and generating downloadable proposals.

**Architecture Diagram:**



As shown in this diagram:

- It starts with **User Input**, where the company or industry name is given.
- Then, the **Research Agent** gathers information about the company and its market trends.
- Next, the **Use Case Generation Agent** analyzes trends and proposes AI/GenAI use cases.
- The **Resource Asset Agent** finds datasets to support those use cases.
- The **Proposal Generator** compiles all insights into a structured markdown file.
- Finally, the **Streamlit App** displays the proposal and allows downloading it easily."

### 3. Tools and Technologies Used

Category	Tools/Libraries
Language	Python 3.12
Multi-Agent Workflow	Custom Python modules
LLM/GenAI	Groq API (Llama-3 70B via LangChain)
Web Research	Serper API, BeautifulSoup
Dataset Search	Kaggle API, HuggingFace Datasets API
Web UI	Streamlit
Environment Management	Python Virtual Environments (.venv), dotenv

### 4. Results and Output

- **Industry Snapshot:**
  - Key offerings, strategic focus areas, and AI trends identified for the given company/industry.

- **Use Case Generation:**
  - 5 tailored AI/GenAI use cases per company.
  - Use cases reference McKinsey, Deloitte, Nexocode insights where applicable.
- **Dataset Asset Collection:**
  - Each use case is linked to 2–3 relevant public datasets from Kaggle or HuggingFace.
- **Proposal Delivery:**
  - Full proposal saved as a structured Markdown file.
  - Web app enables downloading of proposal files directly.

## 5. Conclusion

This Multi-Agent architecture system successfully automates market research, AI opportunity discovery, and resource asset collection for any company or industry.

The platform provides organizations with:

- Strategic AI/GenAI use case recommendations.
- Access to ready datasets for quick prototyping.
- Insights aligned with current industry standards (McKinsey, Deloitte, Nexocode).
- Actionable proposals delivered through an intuitive web application.

This solution streamlines AI adoption and promotes operational innovation across industries.

## Attachments

- Source Code: (Folder with `.py` scripts and `.env` file)
- Streamlit Application: (app.py)

- Architecture Flowchart Diagram: (Architecture\_Diagram.png)
- Final Proposal Samples: (proposal.md files)
- Demo Video: Shared in File.