

■ Research Agent – AI-Powered Academic Assistant

■ Project Overview

Research Agent is an AI system developed to automate and enhance academic and scientific research tasks. Built using IBM Cloud services and advanced AI models, this tool supports literature search, summarization, citation generation, and hypothesis suggestion – all with natural language input.

■ Problem Statement

Traditional research is time-consuming and repetitive. This project addresses the need for a smart assistant that:

- Searches academic content
- Summarizes research papers
- Organizes references
- Drafts research sections
- Suggests hypotheses

■ Proposed Solution

Using IBM Cloud, we developed a research assistant that automates the above tasks. Key IBM services were used to build, deploy, and manage the AI agent efficiently.

■ *Technologies Used*

- IBM Cloud Lite Services
- Natural Language Processing (NLP)
- Retrieval Augmented Generation (RAG)
- IBM Granite Foundation Model

■ *IBM Cloud Services*

- IBM Cloud Watsonx AI Studio – Model building and training
- IBM Cloud Watsonx AI Runtime – Model deployment
- IBM Cloud Agent Lab – Workflow orchestration
- IBM Granite Model – Foundation LLM for understanding and generation

■ Wow Factors

- Faster Results – Summarizes research in minutes
- Smart Insights – Detects patterns and gaps
- Auto-Citations – Instantly formats references
- Bias Reduction – Delivers objective findings

- Multi-Domain Knowledge – Understands diverse topics
- 24/7 Availability – Always ready to assist

■ End Users

- Researchers and Scholars
- Scientists and Engineers
- Doctors and Medical Analysts
- Data Analysts
- R&D; Teams
- Journalists and Writers
- Lawyers and Legal Professionals
- Students
- Patent Officers

■ Future Scope

- Multimodal Input – Voice, image, video integration
- Real-Time Collaboration – Shared agent across teams
- Cross-Language Access – Global research translation
- Offline Support – Edge AI for remote areas
- Domain-Specific Agents – For law, medicine, finance

■ Conclusion

The Research Agent streamlines and accelerates research workflows. With its AI-driven capabilities, it becomes an essential companion for academic and industrial innovation.

■ GitHub Repository

GitHub – Research_Agent: https://github.com/KulshreeNakshane1905/Research_Agent

■ IBM Certifications

IBM Cloud and Watsonx AI training successfully completed.

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