

# IndiaAI Impact Gen-AI Hackathon

Learn, Explore, Build Gen-AI Solutions for India

Presented By :

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# Problem Statement:

## Track 3: Agentic AI applications for real-world issues

This track offers an opportunity to explore innovative use-case scenarios leveraging IBM's open-source technologies, including the Granite series of models, data preprocessing and preparation toolkits, performance benchmarks, and agent development frameworks. You are encouraged to propose end-to-end user scenarios that demonstrate complete automation workflows powered by Generative AI technology assets. This is your chance to showcase functional AI agents and articulate their end-value proposition through practical demonstrations. Consider drawing inspiration from India-centric scenarios where automation can address critical needs and deliver meaningful impact. IBM provides a comprehensive suite of technology assets ([tech assets](#)) and development tools, including the Agent Development Kit ([ADK](#)) for building agentic workflows.

# Technology Used :

## AI / Machine Learning :

- IBM Granite Models
- Natural Language Processing (NLP)
- Retrieval-Augmented Generation(RAG)
- IBM Preprocessing Toolkits

## Agentic Workflow :

- IBM Agent Development Kit (ADK)
- External API Integrations

## Backend & Middleware :

- Flask / FastAPI
- PostgreSQL / MongoDB
- Docker

## Frontend :

- React.js

## Cloud & Deployment :

- IBM Cloud Lite Services

# WOW Factors :

## Key Impact :

- Accelerates Research : Reduces time spent searching and reviewing by providing direct, meaningful insights.
- Enhances Quality : Improves literature reviews through auto-summarization and citation analysis.
- Guides Early Researchers : Offers direction and curated knowledge for those just entering a domain.

## Unique Features :

- Semantic Search : Context-aware search across research papers, journals, and datasets.
- Auto-Summarization : Concise, AI-powered summaries of selected papers.
- Citation & Reference Analysis : Traces influence chains across research.
- Smart Recommendations : Suggests papers aligned with a researcher's focus area.
- Trend Analysis : Tracks keyword/domain evolution over time.
- Collaboration Mapping : Identifies potential co-authors or institutions with shared research interests.

# Result :

## Step 1: Creating an IBM watsonx ai service

IBM Cloud Search resources and products... Catalog Manage Vishal K R's Account

Resource list / watsonx.ai Studio-ak Add tags Details Actions

Manage Plan

watsonx.ai Studio in Cloud Pak for Data and watsonx

Build and deploy machine learning models on either platform. Work with foundation models on watsonx as a Service.

Launch in IBM Cloud Pak for Data IBM watsonx

Helpful links

Documentation Learn about tools, features, and how to perform a wide variety of Data and AI tasks. Cloud Pak for Data → watsonx →

Learning path Start a step-by-step tutorial to get up and running quickly. Cloud Pak for Data → watsonx →

Videos Watch videos to learn about watsonx.ai Studio. Cloud Pak for Data → watsonx →

IBM Watsonx.ai Studio is part of IBM Cloud Pak for Data and Watsonx, and serves as the AI capability of the data fabric architecture.

# Result :

## Step 2 : Creating an AI Agent to automate tasks

The screenshot shows the IBM WatsonX interface with a blue header bar. The top navigation includes "IBM watsonx", "Upgrade", "?", a bell icon, "Vishal K R's Account", "Dallas", and a user profile icon. Below the header, a large circular diagram on the right side illustrates the AI workflow: "Build an AI agent to automate tasks with Agent Lab" (beta) and "Tune a foundation model with labeled data with Tuning Studio". On the left, a "Welcome, Vishal" message is displayed, followed by a section titled "Train, validate, tune and deploy AI models." with a "Customize my journey" button. The main "Discover" section contains two panels: "Developer access" (Project ID: 00000000-0000-0000-0000-000000000000, watsonx.ai URL: https://us-south.ml.cloud.ibm.com) and "Developer hub" (New watsonx Developer Hub to start coding fast, Make your first API request to inference a foundation model in watsonx.ai).

Welcome, Vishal

Train, validate, tune and deploy AI models.

Customize my journey

Open in: AutoSphere\_AI

[...]

Chat and build prompts with foundation models

Start chatting...

Open Prompt Lab

AI

Build an AI agent to automate tasks  
with Agent Lab β

Tune a foundation model with labeled data  
with Tuning Studio

Upgrade

Vishal K R's Account

Dallas

Collage

Discover

Developer access

Project or deployment space

Project ID

Project or deployment space

watsonx.ai URL

https://us-south.ml.cloud.ibm.com

Used to call watsonx.ai APIs such as LLM inferencing, embedding, training, and chatting.

Create API key +

Manage IBM Cloud API keys →

Developer hub

New watsonx Developer Hub to start coding fast.

Make your first API request to inference a foundation model in watsonx.ai. Find the right foundation models and code libraries for your AI applications.

# Result :

## Step 3 : Building the Agentic AI

IBM watsonx

Projects / AutoSphere\_AI / AutoSphere AI: Automate, Assist, Achieve.

Upgrade ? Bell Vishal K R's Account Dallas VK

Share feedback β Autosave on New agent + Deploy 🔍 🔒

Build

Model: llama-3-3-70b-instruct

Agent preview

AutoSphere AI: Automate, Assist, Achieve. 03:35 PM

Welcome to AutoSphere AI: Automate, Assist, Achieve.

Optimizing India's future with IBM GenAI agents for smarter, faster, inclusive workflows.

LangGraph React

Instructions

You are a helpful assistant that uses tools to answer questions in detail.  
When greeted, say "Hi, I am AutoSphere AI. How can I help you?"  
Always leverage IBM Granite models for reasoning, summarization, and translation.  
Preprocess and clean input using IBM preprocessing toolkits before generating responses.  
Use Retrieval-Augmented Generation (RAG) to provide grounded, factual answers.

Advanced configuration

Knowledge

Tools

Add a tool Create custom tool

Added tools (5)

Google search

Retrieve information from the internet with the Google search engine.

Type something... ? 🔍 🔒

# Result :

## Step 4 : Deploying the model as an AI Service

Deploy as an AI service

Create an online deployment. If you want to edit code in notebook format before deploying, save as a deployment notebook. [Learn more.](#)

**Define details**

Deployment name

AutoSphere AI: Automate, Assist, Achieve.

Target deployment space

AutoSphere AI: Automate, Assist, Achieve. ▾

Why don't I see all of my deployment spaces? ⓘ

Description (optional)

Optimizing India's future with IBM GenAI agents for smarter, faster, inclusive workflows.

**Cancel** **Deploy**

# Result :

## Step 5 : AutoSphere AI Agent's Preview

The screenshot shows the IBM WatsonX interface with the following details:

- Header:** IBM WatsonX, Upgrade, Help, Notifications, Vishal K R's Account, Dallas, VK.
- Breadcrumbs:** Deployment spaces / AutoSphere AI: Automate, Assist, Achieve. / AutoSphere AI: Automate, Assist, Achieve. /
- Title:** AutoSphere AI: Automate, Assist, Achieve. Deployed Online
- Tabs:** API reference, Test, Preview, New chat +
- Chat History:**
  - User (V): You 03:43 PM  
Hii
  - AutoSphere AI: Automate, Assist, Achieve. 03:43 PM  
Hi, I am AutoSphere AI. How can I help you?
  - User (V): You 03:43 PM  
I am feeling sick. Can you recommend few steps in medications?
  - AutoSphere AI: Automate, Assist, Achieve. 03:43 PM  
Based on the search results, here are some steps and medications that may help alleviate common cold symptoms:
    1. Prevention: Wash your hands frequently, avoid close contact with people who are sick, and get plenty of rest.
    2. Over-the-counter medications: Consider taking over-the-counter medications such as pain relievers (e.g., acetaminophen or ibuprofen) and decongestants (e.g., pseudoephedrine or phenylephrine) to help relieve symptoms.
    3. Prescription medications: If your symptoms are severe or persistent, consult with your doctor about prescription medications such as antiviral drugs or antibiotics.
    4. Home remedies: Try using a humidifier, drinking plenty of fluids, and getting plenty of rest to help relieve symptoms.
    5. Consult a doctor: If your symptoms worsen or last longer than expected, consult with your doctor for further guidance and treatment.

# Conclusion :

AutoSphere AI demonstrates the power of agentic AI workflows in solving real-world, India-centric challenges. By combining IBM Granite Models, NLP, and agent development frameworks, the system transforms research and decision-making into a faster, smarter, and more collaborative process.

## Key Takeaways :

- **Efficiency** : Automates repetitive tasks like literature search, summarization, and citation management.
- **Accuracy** : Ensures grounded insights through Retrieval-Augmented Generation (RAG) and verified data sources.
- **Innovation** : Suggests hypotheses, trends, and collaboration opportunities that spark new directions in R&D.

With AutoSphere AI, knowledge becomes more accessible, actionable, and interdisciplinary, driving both social good and economic growth.