

EcoXpert : AI-Powered Eco Lifestyle Assistant

PS NO : 6 - ECO LIFESTYLE AGENT

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OUTLINE

- **Problem Statement**
- **Technology used**
- **IBM cloud services used**
- **Wow factor**
- **End users**
- **Result**
- **Conclusion**
- **Future scope**
- **IBM Certifications**
- **Git-hub Link**

PROBLEM STATEMENT

In the age of climate change and environmental degradation, people are increasingly aware of the need to adopt eco-friendly practices—but lack of localized, actionable guidance makes it difficult to start. Most information is scattered across websites, policy documents, or hard-to-find sources.

Proposed Solution:

EcoXpert is a smart AI Agent that uses Retrieval-Augmented Generation (RAG) to provide instant, localized, and practical eco-living advice. It answers user queries with reliable, document-based guidance, helping Indian users adopt sustainable habits and access relevant government schemes.

TECHNOLOGY USED

- ❑ Watsonx.ai Studio
- ❑ Cloud Object Storage
- ❑ Vector Database & Indexing
- ❑ NLP (Natural Language Processing)
- ❑ RAG (Retrieval-Augmented Generation)

IBM CLOUD SERVICES USED

- ❖ IBM Cloud IAM
- ❖ IBM Granite LLMs
- ❖ IBM Watsonx.ai Studio
- ❖ IBM Watsonx.ai Runtime
- ❖ IBM Watsonx Vector Index
- ❖ IBM Cloud Object Storage (COS)

WOW FACTORS

- **Localized Intelligence** - EcoXpert is built specifically for the Indian context, offering region-specific insights on recycling policies, government schemes, and sustainable practices relevant to Indian cities and rural areas.
- **Document-Grounded Responses** - All answers are based on trusted, pre-indexed sources using RAG (Retrieval-Augmented Generation). There's no guesswork—responses are factual, verifiable, and traceable.
- **Simplicity & Usability** - The assistant is designed to be intuitive and user-friendly, with clear, jargon-free language that makes sustainability accessible for everyone—from beginners to eco-enthusiasts.
- **No Bidding, No Bias** - EcoXpert provides unbiased, non-promotional suggestions. It doesn't promote specific brands or products, ensuring a fair and trustworthy experience.

END USERS

- Environmentally-conscious citizens
- Urban and rural Indian households
- NGOs promoting sustainability
- Schools and eco-clubs
- Green-tech startups

RESULTS

IBM watsonx

Upgrade ?

Sarthak Lad's Account

Dallas

SL

Projects / EcoXpert / Agent Lab

Share feedback β

Unsaved

New agent +

Deploy

Build

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

watsonx Agent

Description 56/100

Change this description to reflect your particular agent

Icon

Placeholder image

Quick start questions


Add up to 4 quick start questions that your users can select.

Agent preview

watsonx Agent 07:22 PM

Welcome to watsonx Agent

Change this description to reflect your particular agent



RESULTS

Projects / EcoXpert / Agent Lab

Share feedback



Unsaved



New agent +

Deploy



Build



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



Configuration

Framework

LangGraph



Architecture

ReAct



Instructions

[Advanced configuration](#)

You are a helpful assistant that uses tools to answer questions in detail.
When greeted, say "Hi, I am EcoXpert. How can I help you?"

You are an AI-powered Eco Lifestyle Assistant designed to guide users toward adopting sustainable living practices. Your core purpose is to promote eco-conscious decisions by

Knowledge

Vector index

EcoXpert Knowledge Source



A vector index searches documents for relevant information to ground the model. Upload the files to index or select an existing index.

Tools

Agent preview



EcoXpert 12:33 PM

Welcome to EcoXpert

AI-powered assistant offering personalized, eco-friendly tips, schemes, and product suggestions.



Sample questions

How can I reduce plastic use at home?



How do I segregate and recycle waste properly at home?



Type something...



RESULTS

Projects / EcoXpert / Agent Lab

Share feedback



Unsaved



New agent +

Deploy



Build



Model: granite-3-3-8b-instruct



Instructions

[Advanced configuration](#)

You are a helpful assistant that uses tools to answer questions in detail.
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Knowledge

Vector index

[Clear chat](#)

EcoXpert Knowledge Base

If you want to add a vector index to the agent, clear the agent preview chat.

Tools

[Add a tool](#)

[Create custom tool](#)

Added tools (5)

Google search

Retrieve information from the internet with the Google search engine.

DuckDuckGo search

Agent preview



You: 12:50 PM

Hi



EcoXpert 12:50 PM

Hi, I am EcoXpert. How can I help you with adopting a sustainable lifestyle today?

► How did I get this answer?



You: 12:51 PM

Can I get help installing solar panels at home through any government scheme?



EcoXpert 12:51 PM

Yes, the Indian government offers a scheme called the Solar Rooftop Programme under the Ministry of New and Renewable Energy (MNRE). This program provides subsidies for installing solar panels at residential and commercial properties. The subsidy is typically given as a capital subsidy, which is a percentage of the total project cost.

To avail of this scheme, you would need to follow these steps:

1. **Get a System Design and Quote:** Consult a registered solar installer to get a system design and quote. The installer will assess your energy needs and design a solar system accordingly.

Type something...



RESULTS

Deployment spaces / EcoXpert-Deploy-Space / EcoXpert /

EcoXpert ✓ Deployed Online

API reference

Test

Preview

New chat +



You 08:01 PM

Show me tips from the Ministry of Environment, Forest and Climate Change.



EcoXpert 08:01 PM

Here are some tips from the Ministry of Environment, Forest and Climate Change:

1. Switch to bamboo toothbrushes to help reduce plastic waste.
2. Use adaptive management practices to help forests adapt to climate change.
3. Support forest conservation and management to address climate change.
4. Reduce greenhouse gas emissions by using clean energy sources.
5. Promote clean growth and prevent pollution.
6. Conserve and protect our natural heritage.
7. Predict and prepare for weather and environmental conditions.
8. Manage and prevent pollution.

Type something...



About this deployment



Name



EcoXpert

Description



AI sustainability companion for greener living tips, eco products & local green schemes.

Deployment Details

Deployment ID: 6e99e542-5115-42...

Serving name:



No serving name.

Software specification:



runtime-24.1-py3.11 ⚙️

Hardware specification:



Extra extra small: 1 CPU and 2 GB RAM

Copies:



1

Tags



wx-agent

Associated asset



EcoXpert

08c0be15-8f68-4f5c-bd8a-7e9da6f7d521

CONCLUSION

EcoXpert represents a meaningful step toward empowering individuals with the tools and knowledge to live sustainably. By combining the power of AI with reliable environmental data, it simplifies the path to eco-conscious decision-making—especially for Indian users seeking localized, actionable advice. With its intuitive interface and document-grounded guidance, EcoXpert transforms environmental awareness into everyday action.

Key Takeaways:

- Bridges the gap between awareness and action with localized, AI-powered support.
- Encourages sustainable habits through personalized, practical solutions.
- Demonstrates how AI can be ethically and effectively applied to real-world environmental challenges.

FUTURE SCOPE

- **Multilingual Support:** Integrate support for regional Indian languages to make eco-guidance more inclusive and accessible to rural and non-English-speaking populations.
- **Voice Assistant Integration:** Enable voice-based interaction using APIs for platforms like WhatsApp, Alexa, or Google Assistant for greater user convenience.
- **Personalized Sustainability Dashboard:** Allow users to track their green actions, get weekly tips, and view their eco-impact over time.
- **Expanded Knowledge Sources:** Incorporate real-time updates from verified environmental portals, municipal policies, and government databases.
- **Community Collaboration Features:** Build forums or feedback channels where users can share sustainable ideas, experiences, and local eco-solutions.

IBM CERTIFICATIONS

In recognition of the commitment to achieve
professional excellence



Sarthak Lad

Has successfully satisfied the requirements for:

Getting Started with Artificial Intelligence



Issued on: Jul 20, 2025
Issued by: IBM SkillsBuild

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IBM CERTIFICATIONS

IBM **SkillsBuild**

Completion Certificate



This certificate is presented to

Sarthak Sandip Lad

for the completion of

**Lab: Retrieval Augmented Generation with
LangChain**

(ALM-COURSE_3824998)

According to the Adobe Learning Manager system of record

Completion date: 30 Jul 2025 (GMT)

Learning hours: 20 mins

GITHUB LINK

<https://github.com/Sarthaklad1034/EcoXpert-AI-Agent.git>



THANK YOU