
CAPSTONE PROJECT

ECO LIFESTYLE AGENT

Presented By:

1. SHIVAM TIWARI- HIMT COLLGE,GREATER NOIDA

OUTLINE

- **Problem Statement** (Should not include solution)
- **Proposed System/Solution**
- **System Development Approach** (Technology Used)
- **Algorithm & Deployment**
- **Result (Output Image)**
- **Conclusion**
- **Future Scope**
- **References**

PROBLEM STATEMENT

- An Eco Lifestyle Agent helps individuals embrace a more sustainable lifestyle by delivering tailored, practical guidance. Leveraging trusted environmental resources, it provides users with actionable tips for sustainable living, recommends eco-friendly products, outlines local recycling protocols, and highlights relevant government initiatives. By offering personalized, easily accessible information, the agent enables users to make environmentally conscious decisions in their daily lives, fostering lasting positive impact for both people and the planet.

PROPOSED SOLUTION

- **Define the Goal:**
Build an AI assistant that helps users live more sustainably by providing personalized, actionable eco-tips.
- **Gather and Structure Data:**
Collect trusted information about sustainable living tips, eco-friendly products, recycling rules, and government schemes. Organize this knowledge in a structured database.
- **Build the Core AI:**
Use a powerful language model (e.g., Llama-3) within a conversational framework (like LangGraph+ReAct) to understand user questions in natural language.
- **Integrate Knowledge Retrieval:**
Connect the AI to the vectorized knowledge base using Retrieval-Augmented Generation (RAG), so it finds the most relevant, up-to-date answers for each query.
- **Personalize the Experience:**
Tailor responses using user preferences and location to make suggestions more practical and relevant.
- **Deploy the Agent:**
Make the agent available on web/mobile platforms with an easy-to-use chat interface.
- **Test & Improve:**
Continuously test the agent, collect user feedback, and update the knowledge base to keep answers current and helpful.

SYSTEM APPROACH

The screenshot displays the IBM watsonx web interface for creating a vector index. The browser address bar shows the URL: `dataplatfom.cloud.ibm.com/wx/agents/1c070858-a447-465c-8dda-c91ef6180c03?project_id=1a58805f-a96d...`. The interface is titled "Ground gen AI with vectorized documents" and includes a subtitle: "Add documents to vectorize and create a vector index in memory. Otherwise, select your vector database and specify index details."

Vector stores sidebar:

- In memory (selected)
- watsonx.data Milvus
- Elasticsearch

Add files section:

Drop data files or browse to upload

Add PPTX, DOCX, PDF, or TXT files or select from project.

Add up to 300 MB with PPTX files, 50 MB of PDF files, 50 MB of DOCX files, or 5 MB with TXT and other files.

[Browse](#) [Select from project](#)

Define details section:

Name

Description (optional)

Advanced settings (dropdown arrow)

Bottom bar: [Cancel](#) [Create](#)

ALGORITHM & DEPLOYMENT

The screenshot displays the IBM watsonx Agent interface. The top navigation bar includes the IBM watsonx logo, an 'Upgrade' button, a help icon, a notification bell, and user information for 'SHIVAM T's Account' in 'Dallas'. The main header shows the project path 'Projects / Eco Lifestyle Agent / watsonx Agent' and a 'Share feedback' button. Below this, the 'Build' section is active, showing the 'AI' model 'llama-3-3-70b-instruct'. The 'Configuration' section includes 'Framework' set to 'LangGraph' and 'Architecture' set to 'ReAct'. The 'Instructions' section contains text about the 'Eco Lifestyle Agent' and a link to 'Advanced configuration'. The 'Knowledge' section shows a 'Vector index' set to 'comprehensive knowledge base' and a 'Clear chat' button. The 'Agent preview' section on the right shows a chat history with a user asking for recycling guidelines and the agent providing a detailed response with a list of guidelines and additional resources. A 'Deploy' button is visible in the top right corner of the interface.

IBM watsonx

Upgrade ? Bell SHIVAM T's Account Dallas ST

Projects / Eco Lifestyle Agent / watsonx Agent Share feedback Autosaved 3:44 PM New agent + Deploy

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

Setup

Configuration

Framework Architecture

LangGraph ReAct

Instructions Advanced configuration

The Eco Lifestyle Agent, is an intelligent assistant designed to make sustainable living both easy and accessible for everyone.
Personalized Eco Tips: Provides tailored advice based on your questions, lifestyle, and location.

Knowledge

Vector index Clear chat

comprehensive knowledge base

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

Agent preview

Remember, every small change counts, and making these habits a part of your daily life can have a significant impact on the environment.
► How did I get this answer?

ST You: 03:44 PM
give me recycling guidelines

watsonx Agent 03:44 PM
Here are some recycling guidelines:

1. Material Guidelines: Widely recyclable items vs. check-locally items
2. Preparation Tips: Proper cleaning, sorting, and presentation methods
3. Special Waste: E-waste, batteries, hazardous materials disposal

You can find more information on recycling guidelines and other eco-friendly living tips by visiting websites such as the Environmental Protection Agency (EPA) or local recycling authorities. Additionally, you can use online resources such as the Recycling Partnership's national database to find comprehensive and up-to-date information on recycling in your area.

► How did I get this answer?

Type something...

RESULT

The screenshot displays the IBM watsonx AI interface. The top navigation bar includes the IBM watsonx logo, an 'Upgrade' button, a help icon, a notification bell, and user account information for 'SHIVAM T's Account' in 'Dallas'. The main header shows the project path 'Projects / Eco Lifestyle Agent / watsonx Agent' and a 'Share feedback' link. The interface is divided into two main panels: 'Build' on the left and 'Agent preview' on the right.

Build Panel:

- Model:** llama-3-3-70b-instruct
- Framework:** LangGraph
- Architecture:** ReAct
- Instructions:** The Eco Lifestyle Agent, is an intelligent assistant designed to make sustainable living both easy and accessible for everyone. Personalized Eco Tips: Provides tailored advice based on your questions, lifestyle, and location.
- Knowledge:** comprehensive knowledge base
- Tools:** (empty)

Agent preview Panel:

- User:** You: 03:42 PM. Message: Daily practices and habits for eco-friendly living.
- Agent:** watsonx Agent 03:42 PM. Response: Here are some daily practices and habits for eco-friendly living:
 - 1. Turn off lights when not in use, unplug chargers, consider buying energy-efficient appliances, and utilize natural lighting whenever possible.
 - 2. Incorporate eco-friendly habits into your day-to-day life, such as reducing single-use plastic, using public transport, or carpooling.
 - 3. Make sustainable choices in your daily life, such as eating less meat, using reusable bags, and avoiding products with excess packaging.
 - 4. Adopt sustainable habits, such as reducing water usage, using eco-friendly cleaning products, and composting food waste.
 - 5. Incorporate sustainable living into your daily routine, such as using a refillable water bottle, bringing your own coffee cup, and avoiding paper towels.Remember, every small change counts, and making these habits a part of your daily life can have a significant impact on the environment.
- Footer:** A text input field with the placeholder 'Type something...' and a 'Send' button.

CONCLUSION

- In conclusion, your Eco Lifestyle AI Agent stands as a powerful, user-friendly solution for promoting sustainable living. By seamlessly integrating a comprehensive, trusted knowledge base and leveraging advanced AI capabilities, the agent delivers highly personalized, practical guidance to users. It empowers individuals to make informed, eco-conscious decisions—whether through actionable daily habits, responsible product choices, local recycling compliance, or engagement with government sustainability initiatives.
- Your platform, as shown in the IBM watsonx implementation, efficiently connects users with the resources and tailored recommendations they need to reduce their environmental footprint. By making sustainability easy, accessible, and relevant to everyday life, your Eco Lifestyle Agent plays a crucial role in driving positive change—supporting both personal well-being and the health of our planet.

FUTURE SCOPE

- The Eco Lifestyle AI Agent has strong potential for continual evolution and broader impact as sustainability challenges and digital technologies advance. Key future directions include:
- Deeper Personalization and Learning: Integration of machine learning to better understand individual user behaviors, preferences, and changes over time, enabling hyper-personalized eco-guidance and nudges for maximum impact.
- Real-Time Local Integration: Seamless connection with city, municipal, and regional data sources to deliver live updates on local recycling rules, transportation schedules, pollution alerts, and eco-incentives.
- Expanded Product and Service Ecosystem: Partnerships with sustainable brands and local businesses to offer users discounts, direct ordering, and eco-friendly service bookings based on agent recommendations.
- Gamification and Community Engagement: Implementation of challenges, reward systems, and leaderboards to motivate collective action, share achievements, and facilitate local sustainability communities.
- Multilingual and Accessibility Features: Support for a wide range of languages and enhanced accessibility options to make eco-guidance inclusive for users worldwide, regardless of background or ability.
- Integration with IoT and Smart Devices: Direct interoperability with home automation systems, energy meters, waste-sorting bins, and wearable health trackers to provide real-time feedback and automated eco-actions.

REFERENCES

- Environmental Protection Agency (EPA) – Sustainability and Recycling
Official guidelines and tips for sustainable living and recycling practices.
- Conservation International – Sustainable Living Tips
Actionable advice and resource links for greener lifestyles.
- Ethical Brand Directory & Green Hive
Verified listings of sustainable product brands and certifications.
- The Recycling Partnership – National Recycling Database
U.S. and local recycling rules and program information.
- United Nations – Carbon Footprint Calculators
Tools and resources for tracking personal and community environmental impact.
- Government Schemes (India: PM Surya Ghar, FAME India, National Solar Mission, etc.)
Official portals and news releases for environmental incentives and programs.
- Sustainable Travel International
Recommendations and resources for green and sustainable travel options

IBM CERTIFICATIONS

In recognition of the commitment to achieve
professional excellence



Shivam Tiwari

Has successfully satisfied the requirements for:

Getting Started with Artificial Intelligence



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

Verify: <https://www.credly.com/badges/a0d8676b-1d06-4835-a22f-13b3be9a56c1>



IBM CERTIFICATIONS




IBM CERTIFICATIONS

8/4/25, 4:35 PM

Completion Certificate | SkillsBuild

IBM SkillsBuild

Completion Certificate



This certificate is presented to

Shivam Tiwari

for the completion of

Lab: Retrieval Augmented Generation with LangChain

(ALM-COURSE_3824998)

According to the Adobe Learning Manager system of record

Completion date: 24 Jul 2025 (GMT)

Learning hours: 20 mins

THANK YOU