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# **IBM HACKATHON PROJECT**

## **AI-DRIVEN PLAGIARISM INTELLIGENCE FOR ASSIGNMENTS**

**Presented By:**

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# OUTLINE

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

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# PROBLEM STATEMENT

Academic institutions face growing challenges in detecting nuanced forms of plagiarism, especially those paraphrased or AI-generated. Traditional tools often: Lack contextual understanding, Ignore instructor-specific grading styles, Cannot learn from past submissions or feedback..

## Proposed Solution:

Develop an AI-powered plagiarism detection agent using IBM Watsonx.ai and Granite foundation models. This system: Learns from historical submissions and instructor feedback. Identifies paraphrased or AI-generated content. Provides dynamic, context-sensitive plagiarism analysis.

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# TECHNOLOGY USED

Natural Language Processing (NLP)

Retrieval-Augmented Generation (RAG)

Vector Embeddings

Prompt Engineering

Semantic Similarity Detection

AI Content Classification Cloud Functions or App Runtime

# IBM CLOUD SERVICES USED

- IBM Watsonx.ai Studio
- IBM Granite Foundation Models
- IBM Cloud Object Storage
- IBM Watson Machine Learning
- IBM Cloud Functions
- IBM Cloud Agent Lab

# WOW FACTORS

- Learns and adapts to instructor-specific grading and writing patterns to increase detection accuracy
- Detects paraphrased content even when reworded with advanced language or AI tools
- Identifies and flags AI-generated content using contextual prompt evaluation
- Generates similarity scores along with clear explanations for each flagged section
- Suggests alternative phrasing to help students rewrite potentially plagiarized content
- Can be integrated with Learning Management Systems (LMS) like Moodle or Canvas for seamless assignment checks

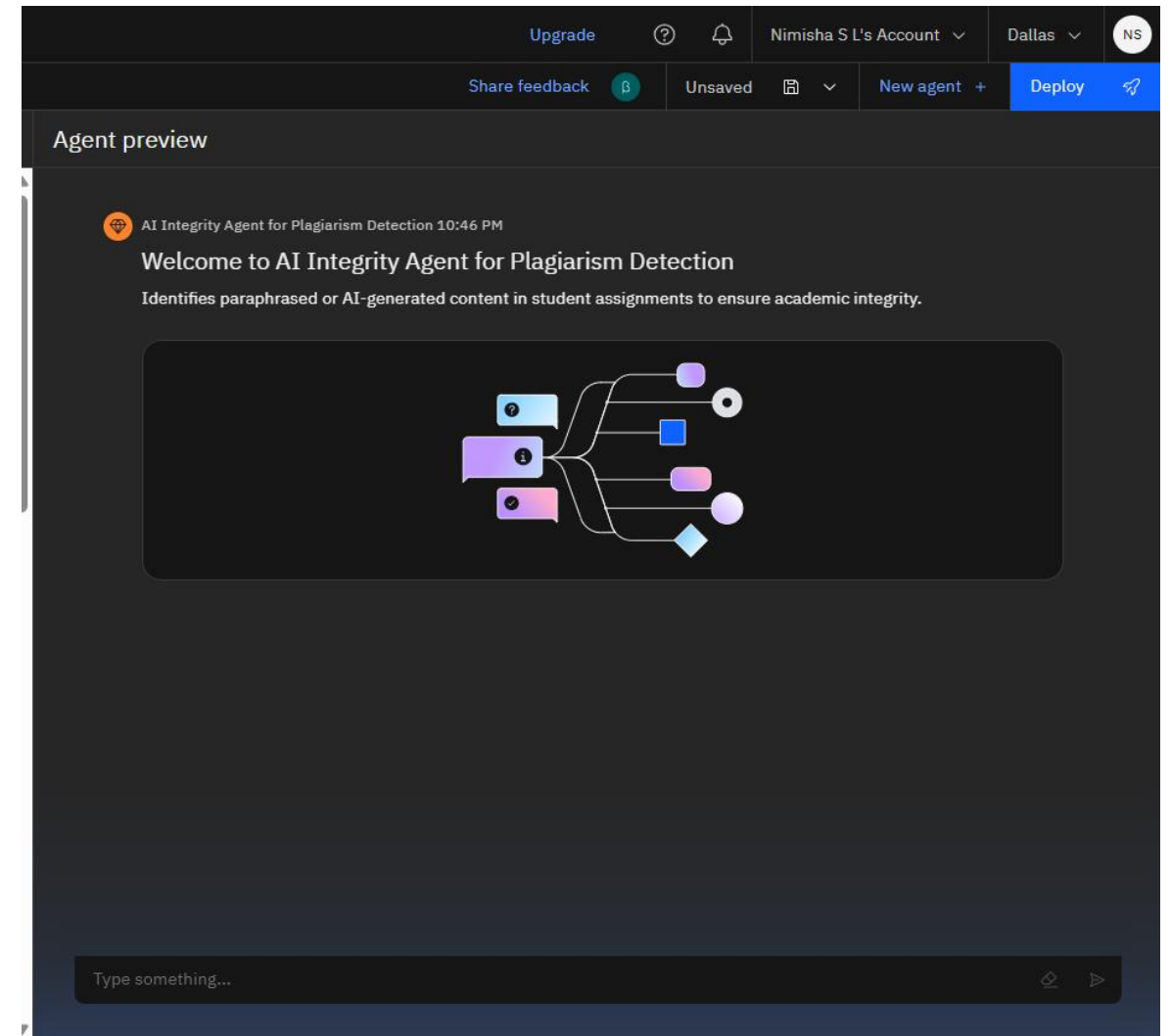
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## END USERS

- University Professors – to evaluate assignment originality
- Academic Institutions – to maintain academic integrity
- Students – to verify and improve originality before submission
- Examination Boards / Admins – for auditing and review

# RESULTS

- AI Integrity Agent for Plagiarism Detection successfully configured using the granite-3-3-8b-instruct model.
- It is ready to identify paraphrased or AI-generated content in student submissions to uphold academic integrity.





# RESULTS

Upgrade

?

🔔

Nimisha S L's Account

Dallas

NS

Share feedback

⌵

New agent +

Deploy

✎

ⓘ

< Agent preview

💎 AI-Powered Plagiarism Detection Agent 10:57 PM

Hi, I am watsonx.ai agent for plagiarism detection. How can I help you today?

▶ How did I get this answer?

NS You: 10:58 PM

What is plagiarism and why is it important to avoid it?

💎 AI-Powered Plagiarism Detection Agent 10:58 PM

Plagiarism is the act of using someone else's work, words, or ideas without giving proper credit. It's important to avoid plagiarism for several reasons:

1. **Academic Integrity:** Plagiarism violates academic integrity principles, which require students to produce original work and acknowledge sources. Educational institutions take plagiarism seriously as it undermines the value of degrees awarded.

2. **Learning Process:** The act of researching, synthesizing information, and forming one's own arguments is integral to learning. Copying others' work deprives students of this crucial educational experience.

3. **Legal Consequences:** In some cases, plagiarism can lead to legal issues, especially if copyrighted material is used without permission.

4. **Reputation:** A student found guilty of plagiarism may face severe penalties including failing grades on assignments or even expulsion from an institution, damaging their academic reputation and future prospects.

To prevent plagiarism, always cite your sources properly and ensure that your work represents your understanding and interpretation of the material, not just a compilation or copy of others' content.

▶ How did I get this answer?

Type something... 

🗨️ ▶

# RESULTS

[Upgrade](#) [?](#) [🔔](#) [Nimisha S L's Account](#) [Dallas](#) [NS](#)


[Share feedback](#) [β](#) [📁](#) [New agent](#) [+](#) [Deploy](#) [🔗](#) [✎](#) [ℹ](#)

[<](#) **Agent preview**

NS

You: 11:06 PM

"Does this sentence look like AI-generated text or human-written?" "In today's interconnected digital landscape, leveraging synergies between data ecosystems is pivotal to optimizing workflow efficiencies and achieving scalable solutions."



AI-Powered Plagiarism Detection Agent 11:06 PM

Analyzing the sentence "In today's interconnected digital landscape, leveraging synergies between data ecosystems is pivotal to optimizing workflow efficiencies and achieving scalable solutions," it exhibits characteristics that could suggest AI generation:

- 1. Formal and Jargon-heavy Language:** The sentence uses sophisticated vocabulary like "leveraging," "synergies," and "ecosystems," which, while not incorrect, might be more common in AI-generated content aiming to sound authoritative or technical.
- 2. Complex Sentence Structure:** The sentence is long and complex, with multiple clauses. While humans can certainly write this way, AI models trained on large datasets might mimic such structures without fully grasping nuanced context or subtlety.
- 3. Abstract Concepts:** The sentence discusses abstract concepts such as "data ecosystems" and "workflow efficiencies" in a manner that prioritizes buzzword compliance over clear explanation, which can be a hallmark of AI-generated content trying to sound comprehensive without deep understanding.

However, it's crucial to note that the absence of definitive evidence does not exonerate the text from potential AI generation. To make a conclusive determination, I would need to compare this text against a vast database of known AI-generated and human-written texts, which is beyond my current capabilities without additional tools or access to such databases.

Therefore, while this sentence shows characteristics that warrant further investigation for originality and human authorship, I cannot definitively classify it as AI-generated or human-written based on the information available to me. Always ensure to verify unusual or complex statements against credible sources or original research materials.

[▶ How did I get this answer?](#)

[🔍](#) [▶](#)

# RESULTS

## Deployed AI Agent

The screenshot displays the IBM watsonx interface for the 'AI-Powered Plagiarism Detection Agent'. The top navigation bar includes the IBM watsonx logo, an 'Upgrade' button, help, and notification icons, and user account information for 'Nimisha S L's Account' in 'Dallas'. The breadcrumb trail shows the path: 'Deployment spaces / Plagiarism & AI Detection Hub / AI-Powered Plagiarism Detection Agent'. The agent's status is 'Deployed' and 'Online'. Below the status, there are tabs for 'API reference', 'Test', and 'Preview', with 'Preview' being the active tab. A 'New chat +' button is located on the right. The chat history shows a user query at 11:33 PM asking for an evaluation of a text on originality and clarity. The AI agent's response, also at 11:33 PM, provides a detailed analysis based on general knowledge, evaluating both the originality and clarity of the provided text.

IBM watsonx Upgrade ? 🔔 Nimisha S L's Account Dallas NS

Deployment spaces / Plagiarism & AI Detection Hub / AI-Powered Plagiarism Detection Agent

AI-Powered Plagiarism Detection Agent Deployed Online

API reference Test **Preview**

New chat +

**You** 11:33 PM

Can you evaluate this text for originality and clarity?" "In the modern educational environment, the use of digital tools has transformed traditional learning methods. Students now rely on online resources for everything from research to assignment submissions. While this shift increases efficiency, it also raises concerns about academic honesty. Therefore, institutions are seeking smarter ways to detect plagiarism and ensure that submitted work truly reflects student understanding."

**AI-Powered Plagiarism Detection Agent** 11:33 PM

Hi, I am watsonx.ai agent for plagiarism detection. How can I help you today?

To evaluate the originality and clarity of the provided text, I will analyze it against a comprehensive database of academic texts and online sources to check for similarities. However, as a text-based AI, I don't have direct access to external databases or past student submissions to perform a real-time plagiarism check.

I can provide an analysis based on general knowledge:

- 1. Originality:** The text appears to be well-written and presents a common theme in educational discourse regarding the impact of digital tools on learning and concerns about academic integrity. Without comparing it against specific sources, I cannot definitively state its originality. However, the argument is coherent and doesn't seem to directly copy from known sources or exhibit signs of AI generation (like unnatural phrasing or lack of contextual relevance).
- 2. Clarity:** The text is clear and concise, effectively communicating the transformation of educational methods due to digital tools and the subsequent challenges in maintaining academic honesty. It uses appropriate terminology (e.g., "plagiarism," "academic integrity") and provides a balanced view by acknowledging both the benefits (efficiency) and drawbacks (honesty concerns) of digital learning tools.

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## CONCLUSION

- The AI agent helps automate plagiarism detection with contextual sensitivity.
- Enhances fairness and academic quality.
- Saves instructor time, reduces false positives, and discourages misuse of AI tools.
- Supports originality improvement through rewrite suggestions.

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## GITHUB LINK

<https://github.com/nimishaaaaaa27/AI-Driven-Plagiarism-Intelligence-for-Assignments>

# FUTURE SCOPE

- Multilingual content support
- Real-time voice-based assignment checks
- Cross-institutional plagiarism network
- LMS and Turnitin plugin integration
- Mobile/web student originality checker
- Research paper similarity analysis

# IBM CERTIFICATIONS

In recognition of the commitment to achieve  
professional excellence



## Nimisha S L

Has successfully satisfied the requirements for:

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### Getting Started with Artificial Intelligence

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Issued on: Jul 15, 2025  
Issued by: IBM SkillsBuild

Verify: <https://www.credly.com/badges/e30fe13e-5d2b-43a6-aae6-cf3ff27201c9>



IBM **SkillsBuild**

Completion Certificate



This certificate is presented to

Nimisha SL

for the completion of

**Lab: Retrieval Augmented Generation with  
LangChain**

(ALM-COURSE\_3824998)

According to the Adobe Learning Manager system of record

**Completion date:** 23 Jul 2025 (GMT)

**Learning hours:** 20 mins





**THANK YOU**