
IBM HACKATHON PROJECT

COURSE CONTENT SIMPLIFICATION AGENT - CLARIFI

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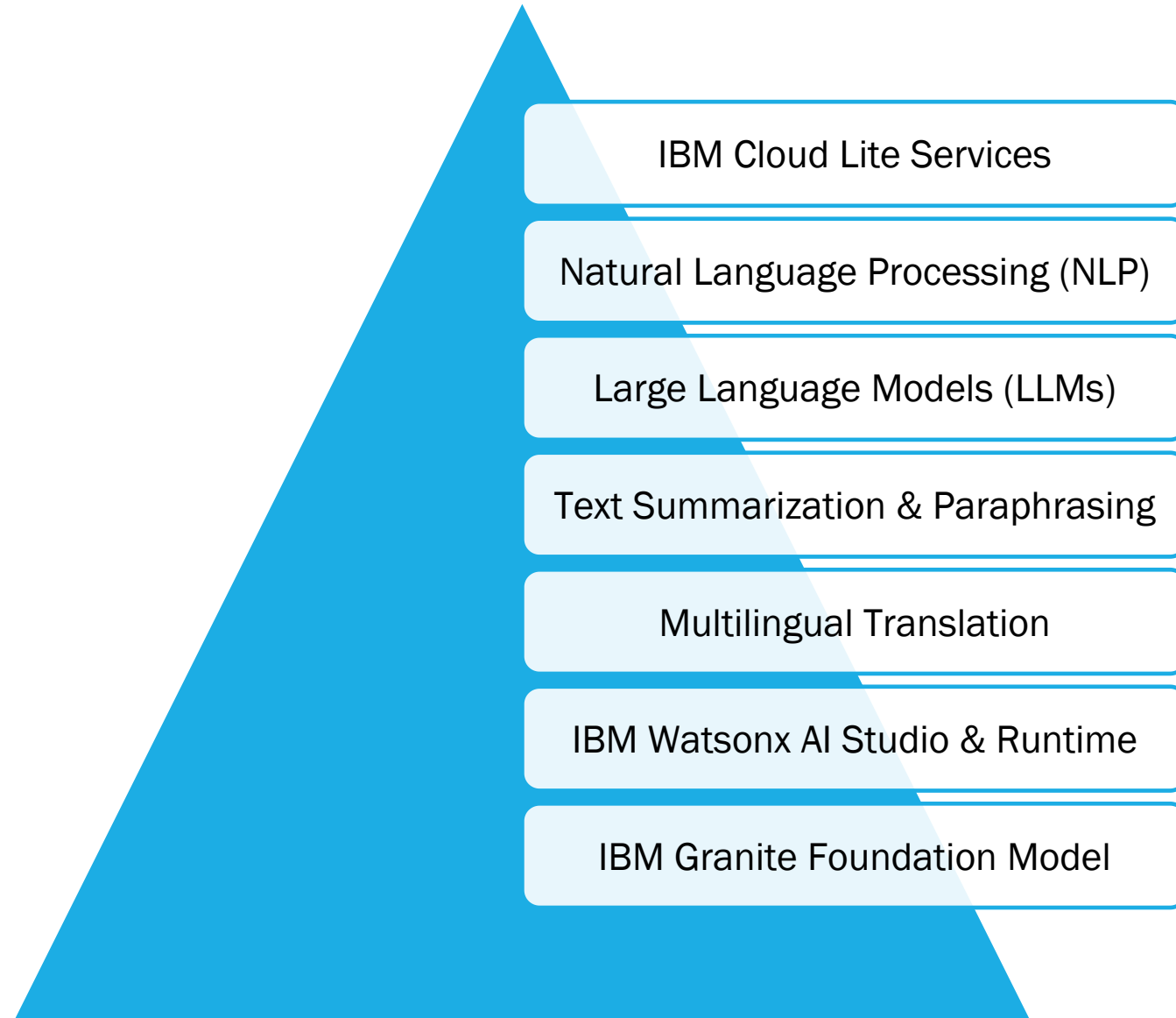
PROBLEM STATEMENT

Many students, especially first-generation college-goers and those from non-English-medium backgrounds, struggle with complex academic material filled with technical jargon and dense explanations. This comprehension gap lowers confidence and performance and worsens educational inequalities—particularly in rural or under-resourced institutions.

Proposed Solution

An AI-powered Course Content Simplification Agent that converts textbooks, research papers, and lecture notes into clear, simplified formats using plain language, segmented explanations, and multilingual support—making education accessible for all learners.

TECHNOLOGY USED



IBM CLOUD SERVICES USED

- IBM Cloud Watsonx AI Studio
- IBM Cloud Watsonx AI runtime
- IBM Cloud Agent Lab
- IBM Granite foundation model

WOW FACTORS

Bridges language and comprehension barriers

Adapts to user's learning level and preferred output format

Promotes equity in education for rural and non-English-medium learners

Supports multilingual simplification with accurate translations

Offers outputs in multiple formats (summary, step-by-step, glossary)

END USERS

- Students from diverse educational backgrounds
- Educators aiming for inclusive teaching
- Colleges and universities promoting accessibility
- NGOs and EdTech platforms supporting digital learning

RESULTS

[Upgrade](#) [?](#) [🔔](#) Manasvi Shetty's Account ▾ Dallas ▾ MS

[Share feedback](#) β Unsaved 📁 ▾ [New agent +](#) [Deploy 🚀](#)

<

Agent preview

MS

You: 09:59 PM

can you give about von neumann architecture

🤖

CLARIFI 09:59 PM

Hi, I am CLARIFI. How can I help you?

The von Neumann architecture, named after mathematician John von Neumann, is a fundamental design model for digital computers. It's based on a few key components and principles:

1. **Central Processing Unit (CPU):** This is the brain of the computer, responsible for executing instructions and performing calculations.

2. **Memory (RAM):** This is where data and instructions are stored temporarily while being processed. It's crucial for the CPU to quickly access this information.

3. **Input Devices:** These allow users to interact with the computer, such as keyboards and mice.

4. **Output Devices:** These display the results of computations, like monitors and printers.

5. **Bus:** This is a communication system that transfers data between different components of the computer.

Type something...

🗑️ ➤

RESULTS

Deployed AI Agent

[Deployment spaces](#) / [deployment](#) / [CLARIFI](#) /

CLARIFI ✔ Deployed Online

[API reference](#)

[Test](#)

[Preview](#)



CLARIFI 10:15 PM

Welcome to CLARIFI

makes tough academic content easy to understand for all students simple, clear and inclusive.



CONCLUSION

- The Course Content Simplification Agent enables fair access to academic knowledge by simplifying dense educational content.
- It empowers students to learn independently, boosts confidence, and promotes inclusive academic success across learning environments.

GITHUB LINK

- <https://github.com/Manollekha/Course-Content-Simplification-Agent>

FUTURE SCOPE

- Add **real-time lecture simplification** using audio
- Create **personalized outputs** based on student's skill level
- Support **more regional languages** for wider reach
- Connect with **virtual tutors and learning platforms**
- Include **interactive and gamified content formats**

IBM CERTIFICATIONS



IBM SkillsBuild

Completion Certificate



This certificate is presented to

Manasvi Shetty

for the completion of

**Lab: Retrieval Augmented Generation with
LangChain**

(ALM-COURSE_3824998)

According to the Adobe Learning Manager system of record

Completion date: 15 Jul 2025 (GMT)

Learning hours: 20 mins



THANK YOU