

---

# **CAPSTONE PROJECT**

## **DIGITAL FINANCIAL LITERACY AI AGENT**

**Presented By**

**Student name : Diksha Gangadhar Dhakne**

**College Name : MIT Academy of Engineering**

**Department : Computer Science and Engineering**

# OUTLINE

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

# PROBLEM STATEMENT

In India, a significant portion of the population—especially in rural and semi-urban areas—lacks essential **digital financial literacy**.

People often struggle with understanding:

- UPI transactions
- Interest rates and personal budgeting
- Online financial scams and fraud
- Investment basics and digital banking

This **lack of awareness** results in:

- Increased vulnerability to digital frauds
- Poor financial decision-making
- Exclusion from secure digital financial services
- Reduced trust in online banking platforms

There is an urgent need to **bridge this knowledge gap** through a reliable, accessible, and easy-to-use solution.

# PROPOSED SOLUTION

We propose an **AI-powered Digital Financial Literacy Agent** built using IBM Watsonx.ai and Retrieval-Augmented Generation (RAG) that:

## ■ Key Capabilities:



- Answers user queries related to digital finance (UPI, interest, scams, budgeting, etc.)
- Fetches accurate information from **verified PDFs** (RBI, NPCI, etc.)
- Supports **multilingual communication** for broader accessibility
- Responds **politely to irrelevant/off-topic questions**
- Educates users with **safe, real-world financial guidance**

## Core Components:

- IBM Watsonx.ai Studio for LLM-based query processing
- Watsonx Vector Index for document retrieval
- IBM Cloud for secure deployment and storage
- NLP to understand user intent naturally

🔒 Designed to be **safe, accessible**, and **trustworthy**, especially for **first-time digital finance users**.

# TECHNOLOGY & TOOLS USED

-  **Technologies Used**
- **IBM Watsonx.ai Studio** – For AI agent development
- **Granite Foundation LLM** – For natural language understanding
- **Vector Index (RAG)** – For retrieving answers from documents
- **NLP (Natural Language Processing)** – For processing user queries
- **PDF Data Sources** – RBI, NPCI, financial literacy documents
- **IBM Cloud Object Storage** – For storing financial documents
-  **IBM Cloud Services Integrated**
- Watsonx.ai Studio
- Watsonx Vector Index
- IBM Granite LLM
- IBM Cloud IAM (Access & Identity Management)
- IBM Cloud Lite Account
- IBM Cloud Object Storage

# SYSTEM ARCHITECTURE & DEPLOYMENT







## ■ **Working Algorithm**

- User submits a query
- Granite LLM understands the question
- Vector Index fetches info from uploaded PDFs
- Agent generates a safe, simple answer
- Response is shown to user (with multilingual support)

## ■ **Deployment Steps**

- Log in to IBM Cloud
- Launch Watsonx.ai Studio
- Upload financial PDFs
- Create & configure the AI agent
- Test in preview
- Deploy via Web Snippet or Streamlit

# RESULTS (SCREENSHOTS)

-  **Key Outcomes:**
- The AI Agent successfully answers finance-related queries like:
  - “What is UPI?”
  - “How to prevent online scams?”
  - “What is the current interest rate for savings accounts?”
- Answers are retrieved from official documents (RBI/NPCI PDFs)
- Handles unrelated questions with polite redirection
- Easy-to-understand responses in natural language
- Multilingual support improves accessibility
-  **Output Screenshots (Add images on your slide)**
-  Agent interface with sample Q&A
-  Uploaded PDF documents in Watsonx.ai
-  Configuration panel (instructions and test area)
-  Final deployed output (e.g., Streamlit preview or web UI)

# CONCLUSION




The **Digital Financial Literacy AI Agent** bridges the gap between users and safe digital finance practices.

- ✓ Provides **reliable, document-backed** answers using IBM Watsonx.ai
- ✓ Promotes **financial awareness** and fraud prevention
- ✓ Supports **multilingual, user-friendly** interactions
- ✓ Helps **first-time users** understand UPI, budgeting, investing, and more

It empowers individuals—especially in rural or underserved areas—to make **informed, secure financial decisions** in the digital era.



# FUTURE SCOPE

-  **Feature Enhancements**
- **WhatsApp & Mobile App Integration**
- **Voice Input** via Speech-to-Text
- **Auto-generated Monthly Finance Reports**
-  **Language & Personalization**
- **Multilingual Expansion** using IBM Language Translator
- **Region-Specific Financial Updates**
- **User Profile-Based Personalization**
-  **Tech Upgrades**
- Integration with **Chatbots or Virtual Assistants**
- Advanced **Analytics & Feedback Loop** for continuous improvement

---

## GITHUB LINK

<https://github.com/Diksha-21-web/Digital-Financial-Literacy-Agent>

# REFERENCES

- **IBM Watsonx.ai**  
<https://www.ibm.com/watsonx>
- **IBM Cloud Lite**  
<https://cloud.ibm.com>
- **Reserve Bank of India (RBI)**  
<https://www.rbi.org.in>
- **National Payments Corporation of India (NPCI) FAQs**  
<https://www.npci.org.in/what-we-do/upi/faq>
- **IBM SkillsBuild**  
<https://skillsbuild.org>
- **IBM Documentation**  
<https://cloud.ibm.com/docs>

# IBM CERTIFICATIONS

In recognition of the commitment to achieve  
professional excellence



## DIKSHA DHAKNE

Has successfully satisfied the requirements for:

---

### Getting Started with Artificial Intelligence

---



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

Verify: <https://www.credly.com/badges/e9efab9b-7d57-4da0-b316-d6caedee4118>



# IBM CERTIFICATIONS

In recognition of the commitment to achieve  
professional excellence



## DIKSHA DHAKNE

Has successfully satisfied the requirements for:

### Journey to Cloud: Envisioning Your Solution



Issued on: Jul 18, 2025

Issued by: IBM SkillsBuild

Verify: <https://www.credly.com/badges/cdn96880-4196-437c-bf4b-cd23ca56c0e>



# IBM CERTIFICATIONS

IBM **SkillsBuild**

Completion Certificate



This certificate is presented to

DIKSHA DHAKNE

for the completion of

**Lab: Retrieval Augmented Generation with  
LangChain**

(ALM-COURSE\_3824998)

According to the Adobe Learning Manager system of record

**Completion date:** 18 Jul 2025 (GMT)

**Learning hours:** 20 mins



**THANK YOU!!**