
CAPSTONE PROJECT

AI AGENT FOR DIGITAL FINANCIAL LITERACY

Presented By:

1. Student Name- Palak Dixit
2. College Name- Krishna Institute of Technology Kanpur Nagar
3. Department- Computer Science and Engineering

OUTLINE

- **Problem Statement**
- **Proposed System/Solution**
- **System Development Approach (Technology Used)**
- **Algorithm & Deployment**
- **Result (Output Image)**
- **Conclusion**
- **Future Scope**
- **References**

PROBLEM STATEMENT

Despite the widespread growth of digital finance tools like UPI, many citizens still struggle with understanding how to safely use them. Users are often vulnerable to online fraud, do not understand interest rates or loans, and lack financial literacy. These challenges are more severe in rural and semi-urban areas, where users may also face language barriers.

PROPOSED SOLUTION

- We propose an AI-powered multilingual Digital Financial Literacy Agent that:
- Answers user questions in their preferred language (e.g., Hindi)
- Uses Retrieval-Augmented Generation (RAG) to fetch content from RBI, NPCI, and trusted banking sources
- Guides users on safe UPI usage, budgeting, EMI, online scam detection, and personal finance
- Uses IBM Granite for natural language understanding and response generation

SYSTEM APPROACH

- **System requirements**
 - ❖ IBM cloud lite services
 - ❖ Natural Language Processing (NLP)
 - ❖ Retrieval Augmented Generation (RAG)
 - ❖ IBM Granite model
- **Library required to build the model**
 - ❖ IBM-Watsonx

ALGORITHM & DEPLOYMENT

- Algorithm Selection:
- Retrieval-Augmented Generation (RAG) using IBM Granite
- Input Data:
- User question (e.g., "How can I start saving money as a student?")
- Embedded vector database with verified financial documents-

For example-

- (a). RBI's UPI User Guide
- (b). Online Banking – Do's and Don'ts
- (c). Glossary of Banking Terms (Hindi/English)
- (d). Financial Fraud Awareness Brochure
- Training:
- IBM Granite LLM used with pre-processed document chunks
- No fine-tuning required due to powerful zero-shot capabilities
- Deployment:

- Flask backend deployed on IBM Cloud Lite
- IBM Watson used for Language Translation
- Frontend as a web app or chatbot interface
- IBM Object Storage holds all static PDFs

RESULT

The screenshot shows a web browser window with the URL `datapatform.cloud.ibm.com/ml-runtime/deployments/e543676a-42cf-4043-9d6c-94b8dab54f6c/chat?space_id=4d3edc97-8942-4874-a128-a7e791be31cd&context=wx&flush=true`. The browser tabs include "FIN_ASSIST — FIN_ASSIST | IBM", "Upload files · Palak2005dixit/FI...", "Digital finance advisor", and "linkedin login - Google Search". The IBM Watsonx header is visible with the text "IBM watsonx" and navigation links for "Upgrade", "Palak Dixit's Account", "Dallas", and a user profile "PD".

The main interface shows the deployment status "FIN_ASSIST" with a green checkmark and "Deployed Online" label. Below this are tabs for "API reference", "Test", and "Preview", with "Preview" being the active tab. A "New chat +" button is located in the top right corner of the chat area.

The chat history shows the following messages:

- You 12:07 PM:** Hi
- FIN_ASSIST 12:07 PM:** Hi, I am FIN_ASSIST AI agent. How can I help you?
- You 12:08 PM:** Can you explain UPI lite?
- FIN_ASSIST 12:08 PM:** Sure, I'd be happy to explain UPI Lite!

UPI Lite is a simplified version of the Unified Payments Interface (UPI) designed to work on feature phones, which are basic mobile phones without internet connectivity. UPI Lite allows users to make payments using UPI without needing a smartphone or data connection.

Here's how it works:

 - 1. Registration:** A user registers their bank account details with their mobile service provider or a UPI Lite service provider.
 - 2. PIN Generation:** The user generates a 4-6 digit PIN for transactions.

At the bottom, there is a text input field with the placeholder "Type something..." and a send button (a right-pointing triangle).

RESULT

The screenshot shows a web browser window with multiple tabs. The active tab is 'FIN_ASSIST — FIN_ASSIST | IBM'. The address bar shows the URL: `dataplatfrom.cloud.ibm.com/ml-runtime/deployments/e543676a-42cf-4043-9d6c-94b8dab54f6c/chat?space_id=4d3edc97-8942-4874-a128-a7e791be31cd&context=wx&flush=true`. The page header includes 'IBM watsonx' and a navigation bar with 'Upgrade', 'Palak Dixit's Account', 'Dallas', and a profile icon 'PD'. Below the header, the breadcrumb 'Deployment spaces / FIN_ASSIST / FIN_ASSIST /' is visible. The main content area shows 'FIN_ASSIST' with a green 'Deployed' status and an 'Online' label. There are three tabs: 'API reference', 'Test', and 'Preview', with 'Preview' being the active tab. The chat interface shows a conversation where the user asks 'How do I block my Upi if my phone is stolen?'. The assistant responds with a detailed guide on how to block UPI services on a stolen phone, including steps like changing the mobile number, logging out of UPI apps, blocking the UPI ID, and reporting the theft to the RBI. The chat input field at the bottom says 'Type something...'. The Windows taskbar at the bottom shows the time as 12:18 on 03-08-2025, along with various system icons and a search bar.

FIN_ASSIST Deployed Online

API reference Test **Preview**

New chat +

You 12:08 PM

How do I block my Upi if my phone is stolen?

FIN_ASSIST 12:08 PM

If your UPI-enabled app is on your stolen phone, it's crucial to block it immediately to prevent unauthorized transactions. Here's how you can do it:

- 1. Immediately change your mobile number:** Contact your telecom service provider and request a new SIM card with a new mobile number. This will ensure that even if someone has your old SIM, they won't be able to access your UPI services.
- 2. Log out of UPI apps:** If you had UPI apps (like Google Pay, PhonePe, Paytm, etc.) installed on your phone, log out of these apps from any other device or web interface you have access to.
- 3. Block the UPI ID:** Go to your bank's net banking or mobile banking app and block the UPI ID associated with your stolen phone. Each bank has a slightly different process, so you might need to contact your bank's customer service for specific instructions.
- 4. Report to your UPI provider:** If you used a third-party app for UPI transactions (like Google Pay, PhonePe), report the theft and request them to block the UPI access linked to your account from the stolen device.
- 5. Inform RBI's Customer Care:** You can also inform the Reserve Bank of India (RBI) about the theft. RBI has a dedicated helpline for such issues.

Remember, acting quickly is essential to minimize potential fraud. Always keep your bank account and UPI details secure, and

Type something...

CONCLUSION

- The agent makes digital finance safe and understandable for all.
- Uses IBM Granite to generate accurate, real-time answers
- Supports regional languages for inclusiveness
- Reduces risks of fraud and builds trust in digital transactions

FUTURE SCOPE

- WhatsApp and Voice integration for elderly users
- Real-time scam alerting using NLP-based detection
- Step-by-step voice instructions for actions like UPI transfers
- Personalized modules for students, workers, and senior citizens

REFERENCES

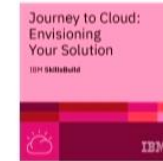
- <https://www.rbi.org.in>
- <https://www.npci.org.in>
- <https://www.financialliteracy.gov.in>
- IBM Granite and Watsonx.ai documentation

IBM CERTIFICATIONS



IBM CERTIFICATIONS

In recognition of the commitment to achieve
professional excellence



Palak Dixit

Has successfully satisfied the requirements for:

Journey to Cloud: Envisioning Your Solution

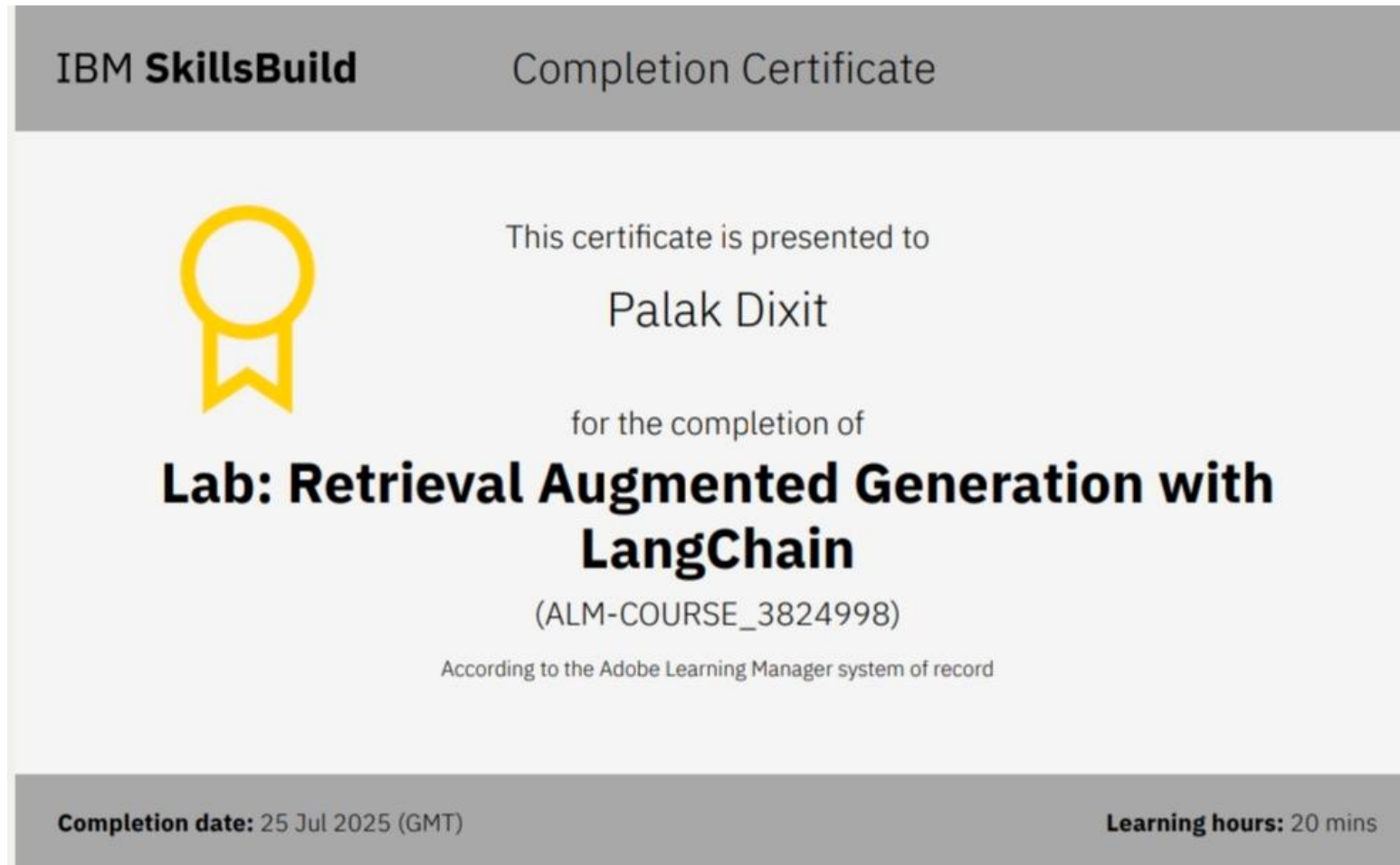


Issued on: Jul 16, 2025
Issued by: IBM SkillsBuild

Verify: <https://www.credly.com/badges/e750ae02-fc7d-4d70-92b8-49a9a4ae2d6f>



IBM CERTIFICATIONS





THANK YOU