
IBM HACHKATHON PROJECT

AI AGENT FOR DIGITAL FINANCIAL LITERACY

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OUTLINE

- Problem Statement
- Proposed System/Solution
- Technologies
- IBM Cloud Services
- Wow Factor
- End Users
- API Reference After Deployment
- Deployments And Preview
- Results
- Conclusion
- Future Scope
- Git Hub Link
- IBM Certifications

PROBLEM STATEMENT

AI AGENT FOR DIGITAL FINANCIAL LITERACY: FINANCE_ADVISOR

The Challenge – An AI Agent for Digital Financial Literacy, powered by RAG (Retrieval-Augmented Generation), helps users understand and navigate essential financial tools and practices. It retrieves reliable content on using UPI, avoiding online scams, understanding interest rates, budgeting, and personal finance management from government portals, banking websites, and educational platforms. With multilingual support, users from diverse backgrounds can interact in their preferred language and ask questions like “How do I send money via UPI?” or “What is a safe interest rate for a loan?” The agent ensures financial literacy is accessible, personalized, and culturally inclusive. This AI-driven assistant empowers users with knowledge, protects them from fraud, and builds confidence in digital finance.

TECHNOLOGIES USED:

- IBM Cloud Object Storage
- Custom Agent Instructions
- AI Foundation Model : watsonx.ai
- Cloud Platform : IBM Cloud
- Large Language Models (LLM's)
- IBM App Connect
- IBM Granite Model
- IBM Cloud Lite Services
- Natural Language Processing
- Watsonx.ai Associative Service
- Authentication : IBM App ID

IBM CLOUD SERVICES USED:

- IBM Cloud Object Storage
- AI Foundation Model : watsonx.ai
- Cloud Platform : IBM Cloud
- IBM App Connect
- IBM Granite Model
- IBM Cloud Lite Services
- Watsonx.ai Associative Service
- Authentication : IBM App ID
- IBM AI Tools
- IBM Cloud watsonx.ai Runtime

WOW FACTORS:

- Cognitive AI That Understands Money
- Grounded in Real Financial Intelligence (RAG Power)
- Talks Like ChatGPT, Thinks Like Warren Buffett
- Built Entirely on Enterprise-Grade IBM Cloud Stack
- Hyper-Personalized Financial Guidance
- Bridges Knowledge Gaps With Smart Questions
- Ethical AI With Boundaries
- Transforms Passive Learning into Active Financial Mastery
- Fuses Finance, Psychology, and AI into a Single Intelligent Ecosystem
- Built to Scale from Student Projects to Real-World Fintech

END USERS OF FINANCE_ADVISOR:

- College Students & Young Professionals
- Working-Class Individuals
- Non-Finance Background Learners
- Retail Investors & Stock Market Enthusiasts
- Small Business Owners / Entrepreneurs
- Aspiring Finance Professionals / MBA Students
- General Public Seeking Financial Literacy
- Retired Individuals & Senior Citizens
- Freelancers & Gig Workers
- Educators & Financial Literacy Trainers

API REFERENCE AFTER DEPLOYMENT:

The screenshot shows the IBM WatsonX interface for a deployment named 'Finance_Advisor'. The deployment is in a 'Deployed' state and is 'Online'. The 'API reference' tab is selected, showing endpoints for inference. There are two sections: 'Private endpoint' and 'Public endpoint', each with two URLs. A 'Bearer <token>' field is present with 'IAM' as the token. A sidebar on the right provides details about the deployment, including its name, description, deployment ID, serving name, software specification (runtime-24.1-py3.11), hardware specification (extra extra small: 1 CPU and 2 GB RAM), number of copies (1), tags (wx-agent), and associated asset (Finance_Advisor).

IBM watsonx Upgrade ? 1 Varun Bobo's Account Sydney VB

Deployment spaces / FINANCE__ADVISOR / Finance_Advisor /

Finance_Advisor Deployed Online

API reference Test Preview

Endpoints for inferencing ⓘ

Private endpoint

`https://au-syd.ml.cloud.ibm.com/ml/v4/deployments/c5851188-161d-467b-97e3-25429d76a66f/a1_service?version=...`

`https://au-syd.ml.cloud.ibm.com/ml/v4/deployments/c5851188-161d-467b-97e3-25429d76a66f/a1_service?version=...`

Public endpoint

`https://au-syd.ml.cloud.ibm.com/ml/v4/deployments/c5851188-161d-467b-97e3-25429d76a66f/a1_service?version=...`

`https://au-syd.ml.cloud.ibm.com/ml/v4/deployments/c5851188-161d-467b-97e3-25429d76a66f/a1_service?version=...`

[Learn more](#) about the 2021-05-01 version query parameter

Code snippets

cURL Java JavaScript Python Scala

`au-syd.dai.cloud.ibm.com/ml-runtime/deployments/c5851188-161d-467b-97e3-25429d76a6...`

Bearer <token> ⓘ

IAM

About this deployment ×

Name Finance_Advisor

Description Finance_Advisor is an AI-powered financial mentor built using IBM watsonx.ai

Deployment Details

Deployment ID: c5851188-161d-46...

Serving name: No serving name.

Software specification: runtime-24.1-py3.11 ⓘ

Hardware specification: Extra extra small: 1 CPU and 2 GB RAM ⓘ

Copies: 1 ⓘ

Tags wx-agent ⓘ

Associated asset Finance_Advisor ⓘ

7B4284ec-bbcd-4f88-aa45-600a6a9c0c55

DEPLOYMENT AND PREVIEW:

The screenshot displays the IBM Watsonx user interface. At the top, a dark navigation bar includes the 'IBM watsonx' logo, an 'Upgrade' button, a help icon, a notification bell with a red '1', and a user profile for 'Varun Bobo's Account' in 'Sydney'. Below the navigation bar, a breadcrumb trail reads 'Deployment spaces / FINANCE__ADVISOR / Finance_Advisor /'. The main content area features the 'Finance_Advisor' model name, followed by a green checkmark and the status 'Deployed Online'. Three tabs are visible: 'API reference', 'Test', and 'Preview', with the 'Preview' tab currently selected. The preview area shows a chat interface with a message from 'Finance_Advisor' at 09:32 PM: 'Welcome to Finance_Advisor. Finance_Advisor is an AI-powered financial mentor built using IBM watsonx.ai'. Below the message is a large blue graphic with white wavy lines and a white circle. At the bottom, there is a 'Quick start samples' section with a text input field containing 'type something...' and a send button.

RESULTS:

The screenshot displays the IBM watsonx Agent Lab interface. The top navigation bar includes the IBM watsonx logo, an 'Upgrade' button, a help icon, a notification bell, and user account information for 'Varun Bobo's Account' in 'Sydney'. The breadcrumb trail shows 'Projects / FINANCE_ADVISOR / Agent Lab'. The main interface is split into two panels: 'Build' on the left and 'Agent preview' on the right.

Build Panel:

- Model:** llama-3-2-11b-vision-instruct
- Icon:** A blue circular icon with a white smiley face.
- Placeholder image:** A blue rectangular image with white wavy lines.
- Quick start questions:** A section titled 'Add up to 4 quick start questions that your users can select.' containing four questions, each with a trash icon for removal:
 - Do you want to learn how to save and grow your money smarter?
 - Are you curious about how the stock market works?
 - Want help understanding mutual funds, SIPs, or other investment options?
 - Do you want to grow wealth long-term or need quick strategies to manage money better today?

Agent preview Panel:

- Messages:**
 - You:** 09:16 PM. "Want help understanding mutual funds, SIPs, or other investment options?"
 - Finance_Advisor:** 09:16 PM. "Mutual funds and SIPs are popular investment options in India. Mutual funds are a type of investment where a pool of money is collected from various investors and invested in a diversified portfolio of stocks, bonds, and other securities. SIPs, or Systematic Investment Plans, are a type of investment plan where a fixed amount of money is invested at regular intervals, usually monthly, in a mutual fund."
- Text Content:**
 - ELSS:** ELSS, or Equity Linked Savings Scheme, is a type of mutual fund that offers tax benefits under Section 80C of the Income Tax Act 1961. It has a lock-in period of three years and can be invested in using both SIP and lump sum investment options.
 - Clearing:** Clearing is the process of settling transactions, including trades and payments, between parties. It involves the management of post-trading, pre-settlement credit exposures to ensure that trades are settled in accordance with market rules, even if a buyer or seller should become insolvent prior to settlement. Clearing houses were formed to facilitate such transactions among banks.
 - Trading:** In trading, clearing is necessary because the speed of trades is much faster than the cycle time for completing the underlying transaction. It involves the management of post-trading, pre-settlement credit exposures to ensure that trades are settled in accordance with market rules, even if a buyer or seller should become insolvent prior to settlement. Processes included in clearing are
- Input:** A text box at the bottom with the placeholder text 'Type something...'

RESULTS:

The screenshot displays the IBM Watsonx interface for the 'Finance_Advisor' deployment. The top navigation bar includes the 'IBM watsonx' logo, an 'Upgrade' button, a help icon, a notification bell with a red '1', and user account information for 'Varun Bobo's Account' in 'Sydney'. The breadcrumb trail shows 'Deployment spaces / FINANCE__ADVISOR / Finance_Advisor'. The main header for 'Finance_Advisor' indicates it is 'Deployed' and 'Online'. Below this 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 area shows a message from 'You' at 10:44 PM asking 'Are you curious about how the stock market works?'. The 'Finance_Advisor' responds at 10:44 PM with a detailed explanation of the stock market, mentioning the NASDAQ Stock Market and its role in the technology sector. A link 'How did I get this answer?' is provided below the response. At the bottom, there is a text input field with the placeholder 'Type something...' and a send button.

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Deployment spaces / FINANCE__ADVISOR / Finance_Advisor /

Finance_Advisor ✓ Deployed Online

API reference Test **Preview**

New chat +

You 10:44 PM
Are you curious about how the stock market works?

Finance_Advisor 10:44 PM
The stock market works by allowing companies to raise capital by issuing shares of stock to the public. The stock market is a platform where buyers and sellers can trade these shares. The price of the shares is determined by supply and demand, and it can fluctuate constantly. The NASDAQ Stock Market is one of the largest stock exchanges in the world, and it is home to many technology and growth companies. It was founded in 1971 and has since grown to become a major player in the global financial markets. The NASDAQ Stock Market is known for its high-tech and innovative companies, and it is often seen as a barometer of the overall health of the technology sector.

► How did I get this answer?

Type something...

RESULTS:

The screenshot displays the IBM watsonx user interface. At the top, the navigation bar includes the IBM watsonx logo, an 'Upgrade' button, a help icon, a notification bell with a red '1', and user account information for 'Varun Bobo's Account' and 'Sydney'. Below the navigation bar, the breadcrumb trail reads 'Deployment spaces / FINANCE__ADVISOR / Finance_Advisor /'. The main content area is titled 'Finance_Advisor' with a green checkmark indicating it is 'Deployed' and 'Online'. There are three tabs: 'API reference', 'Test', and 'Preview', with 'Preview' being the active tab. A 'New chat +' button is located on the right side of the chat area.

The chat conversation shows a user asking 'how can i start mutual funds?' at 09:28 PM. The Finance_Advisor responds at 09:28 PM with the following steps:

1. Choose a mutual fund: Research and select a mutual fund that aligns with your investment goals and risk tolerance.
2. Open an account: Create an account with a brokerage firm or a mutual fund company.
3. Fund your account: Deposit money into your account to invest in the mutual fund.
4. Select your investment: Choose the mutual fund you want to invest in and specify the amount you want to invest.
5. Monitor your investment: Regularly review your investment portfolio to ensure it remains aligned with your goals and risk tolerance.

The response concludes with: 'It's also important to understand the fees and expenses associated with mutual funds, as well as the risks involved. It's recommended to consult with a financial advisor or conduct your own research before making any investment decisions.'

At the bottom of the chat area is a text input field with the placeholder 'Type something...' and a send button.

The right sidebar provides details about the deployment:

- Description:** Finance_Advisor is an AI-powered financial mentor built using IBM watsonx.ai
- Deployment Details:**
 - Deployment ID: 94298ad6-a01a-4e...
 - Serving name: No serving name.
 - Software specification: runtime-24.1-py3.11
 - Hardware specification: Extra extra small: 1 CPU and 2 GB RAM
 - Copies: 1
- Tags:** wx-agent
- Associated asset:** Finance_Advisor (with asset ID: 109f15c7-96f8-4bdb-b84b-fb2679b403cc)
- Last modified:** 5 minutes ago
- Created on:** Aug 4, 2025

RESULTS:

The screenshot displays the IBM watsonx user interface. At the top, the navigation bar includes the IBM watsonx logo, an 'Upgrade' button, a help icon, a notification bell with a red '1', and user information for 'Varun Bobo's Account' and 'Sydney'. The breadcrumb trail shows the path: 'Deployment spaces / FINANCE__ADVISOR / Finance_Advisor /'. The main content area is titled 'Prediction results' and features a toggle for 'Display format for prediction results' with 'Table view' and 'JSON view' options. The 'JSON view' is selected. A 'Show input data' toggle is also present. The JSON output is displayed in a light blue box, showing a single choice with an index of 0 and a message. The message text describes the Finance Advisor on Watsonx.ai as a virtual personal finance advisor using generative AI for financial guidance, budgeting, saving, investing, and personalized financial plans. A 'Download JSON file' button is located at the bottom right of the JSON output area.

IBM watsonx

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Deployment spaces / FINANCE__ADVISOR / Finance_Advisor /

Fin Prediction results

Display format for prediction results

☐ Table view ☒ JSON view ☐ Show input data ⓘ

JSON view

```
{
  "choices": [
    {
      "index": 0,
      "message": {
        "content": "The Finance Advisor on Watsonx.ai is a virtual personal finance advisor that uses generative AI to provide financial guidance and advice. It is built using IBM watsonx, a portfolio of AI products that accelerates the impact of generative AI in core workflows to drive productivity. The advisor can help with tasks such as budgeting, saving, and investing, and can provide personalized financial plans and recommendations. It can also assist with financial goal planning, retirement planning, and tax planning. The advisor is powered by IBM watsonx AI and data platform and can integrate with other financial tools and services.",
        "role": "assistant"
      }
    }
  ]
}
```

Download JSON file

RESULTS:

The screenshot displays the IBM watsonx web interface. At the top, the navigation bar includes the IBM watsonx logo, an 'Upgrade' button, a help icon, a notification bell with a red '1', and user account information for 'Varun Bobo's Account' in 'Sydney'. The breadcrumb trail indicates the current location: 'Deployment spaces / FINANCE__ADVISOR / Finance_Advisor'. Below this, there are tabs for 'Deployments', 'Code', and 'Schema', with 'Deployments' being the active tab. A search bar and a 'New deployment' button are positioned above a table of deployments. The table has columns for Name, Type, Status, Tags, and Last modified. One deployment is listed: 'Finance_Advisor' with Type 'Online', Status 'Deployed' (indicated by a green checkmark), and a tag 'wx-agent'. The last modified time is '1 hour ago' by 'Varun Bobo (You)'. To the right of the table, a sidebar titled 'About this asset' provides details for the 'Finance_Advisor' asset, including its Name, Description ('Finance_Advisor is an AI-powered financial mentor built using IBM watsonx.ai'), Asset Details (Type: python, AI service ID: 784204ec-bbcd-4f..., Software specification: runtime-24.1-py3.11), Tags (wx-agent), and Last modified/created information (1 hour ago by Varun Bobo, Created on Aug 4, 2025 by Varun Bobo). The bottom of the interface shows pagination controls: 'Items per page: 20', '1-1 of 1 items', and '1 of 1 pages'.

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Deployment spaces / FINANCE__ADVISOR / Finance_Advisor

Deployments Code Schema

Search New deployment

Name	Type	Status	Tags	Last modified
Finance_Advisor	Online	Deployed	wx-agent	1 hour ago Varun Bobo (You)

Items per page: 20 1-1 of 1 items 1 of 1 pages

About this asset

Name
Finance_Advisor

Description
Finance_Advisor is an AI-powered financial mentor built using IBM watsonx.ai


Asset Details
Type: python
AI service ID: 784204ec-bbcd-4f...
Software specification: runtime-24.1-py3.11




Tags
wx-agent



Last modified
1 hour ago by Varun Bobo

Created on
Aug 4, 2025 by Varun Bobo

RESULTS:


 IBM watsonx

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 **Varun Bobo**
bobovarun666@gmail.com
[Edit IBMid profile](#) 




☐ Dark theme off

Profile Git integrations **User API key**

 **User API key cpd-apikey-IBMid-6950010QPE-2025-08-04T15:55:50Z successfully replaced with cpd-apikey-IBMid-6950010QPE-2025-08-04T15:56:15Z** ×
Your new active key is stored in IBM watsonx and IBM Cloud. Your previously active key is now in phase out status.

User API key
A user API key is required to authenticate runtime operations in IBM watsonx.
Rotate keys as needed to create a new key and phase out the current key. [Learn more](#)

  **Rotate**  

Name	Creation date	Status
cpd-apikey-IBMid-6950010QPE-2025-08-04T15:56:15Z	August 4, 2025 at 9:26:15 PM	 Active
cpd-apikey-IBMid-6950010QPE-2025-08-04T15:55:50Z	August 4, 2025 at 9:25:50 PM	 Phased out 

RESULTS:

IBM Cloud

Search resources and products...

Catalog Manage Varun Bobo's Account

Resource list

Create resource +

Name	Group	Location	Product	Status	Tags
Filter by name or IP address... Filter by group... Filter... Filter... Filter...					
Compute (0)					
Containers (0)					
Networking (0)					
Storage (1)					
Cloud Object Storage-bh	Default	Global	Cloud Object Storage	Unknown	cpdaas
Converged infrastructure (0)					
Enterprise applications (0)					
AI / Machine Learning (2)					
watsonx.ai Runtime-rx	Default	Sydney (au-syd)	watsonx.ai Runtime	Active	cpdaas
watsonx.ai Studio-mq	Default	Sydney (au-syd)	watsonx.ai Studio	Active	cpdaas
Analytics (0)					
Blockchain (0)					

FUTURE SCOPE:

- Integration with Real-Time Financial Data Sources
- Multilingual and Voice-Based Interaction
- Personalized Financial Roadmaps
- Regulatory and Taxation Intelligence
- Mobile App Deployment & Cross-Platform Accessibility
- Gamified Financial Education Modules
- Enterprise Use Cases: Fintech & EdTech Integration
- Predictive Financial Analytics
- Blockchain and Digital Asset Advisory
- Continuous Learning through Feedback Loops

CONCLUSION:

The Finance Advisor project is a strategic fusion of AI, financial intelligence, and user-centric design — built on IBM Cloud with watsonx.ai at its core. It delivers precise, grounded, and interactive financial insights, transforming complex market knowledge into simple, actionable guidance for users of all levels. This solution not only addresses the rising demand for accessible financial literacy but also showcases real-world application of GenAI, retrieval-based learning, and intelligent dialogue systems. It's not just a chatbot — it's a scalable, intelligent financial companion with the potential to redefine digital finance advisory.

REFERENCES

1. IBM Cloud & watsonx.ai Documentation

<https://www.ibm.com/docs/en>

2. IBM SkillsBuild Virtual Internship Program

3. Books & Thought Leaders in Finance

The Intelligent Investor – Benjamin Graham

The Psychology of Money – Morgan Housel

4. National Stock Exchange (NSE) & SEBI Resources

<https://www.nseindia.com>

5. Mentorship Support

I sincerely thank my mentor, whose guidance during the IBM SkillsBuild Virtual Internship Program was instrumental in enhancing my technical clarity, thought process, and project execution.

GIT HUB LINK:

https://github.com/VARUN-B18/FINANCE_ADVISOR_AI_AGENT_IBM_PROJECT

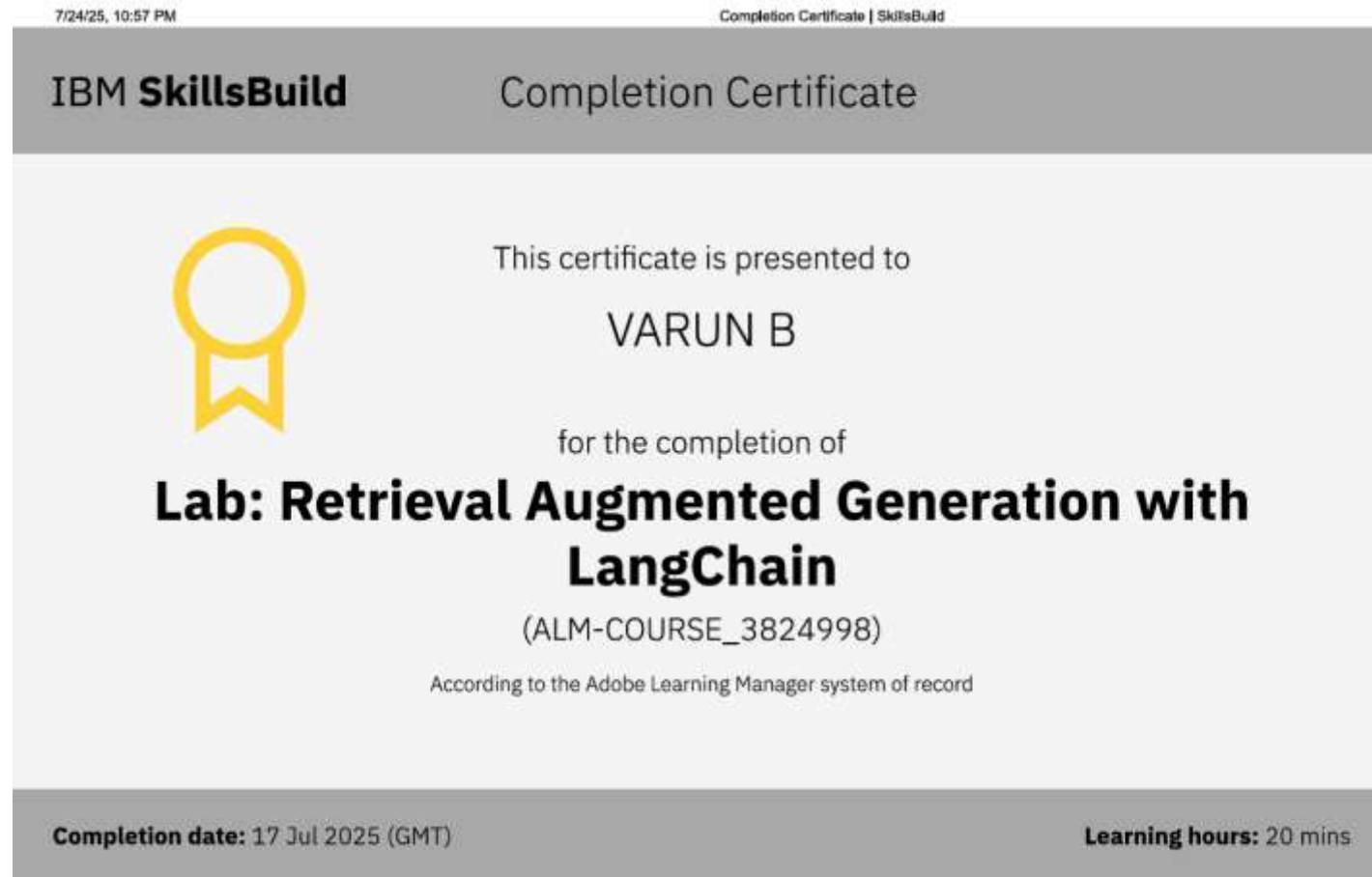
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THANK YOU