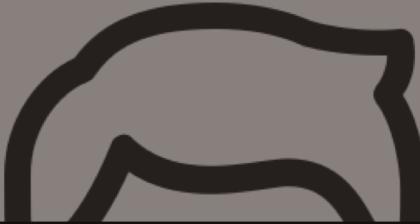


Financial Investment Coach

Akshaya Varakunan, Jack Chen, Jimmy Guan,
Meghana Reddy Vusirika, Wayne Hao

Meet Inexperienced Ivan



- Is graduating university this year

40% of young adults don't understand investing **AND 74%** don't feel confident in making money when investing. (Co-operators, 2023)



- Wants to start investing

Introducing the Financial Investment Coach

Ease Of Use

Personalization

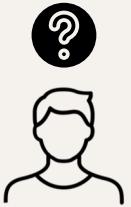
Investment
Insights

An easy and reliable way to learn about investing!

Preview

1. Problem statement
2. Proposed solution and Business case
3. Data source and Pipeline sequence
4. Measuring impact
5. Ethical considerations
6. Future research

Problem Statement



What is the problem?

- Lack of accessible, personalized financial investment advice
- Hard to navigate investment world



Underlying Cause

- Unequal access to personalized financial advice
- Average person relies on generic advice



Importance

- Promotes financial inclusion and well-being
- Greater individual and economic stability

Proposed Solution

A financial investment coach chatbot developed with Azure AI



Key Features

- Rich user interactions
- Educational content
- Personalization



Azure Services

- Azure Cognitive Services
- Azure Open AI
- Azure App Service



Benefits to Users

- High availability
- Cost-free usage
- Easily accessible

Business Case – Advantages of Azure AI Chatbot

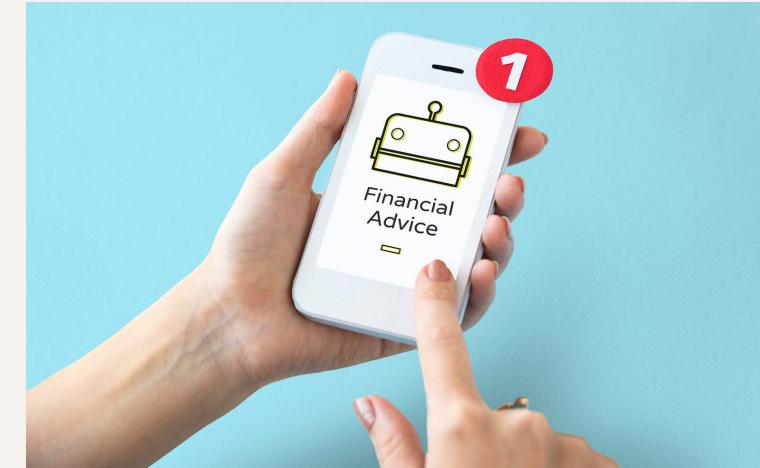
Other Financial Investment Coach Models

- Personal financial coach: service is based on reservation and costs
- Online blogs: pre-composed and general content
- Different service providers: cost management and software compatibility

AI Chatbot Financial Investment Coach with Azure

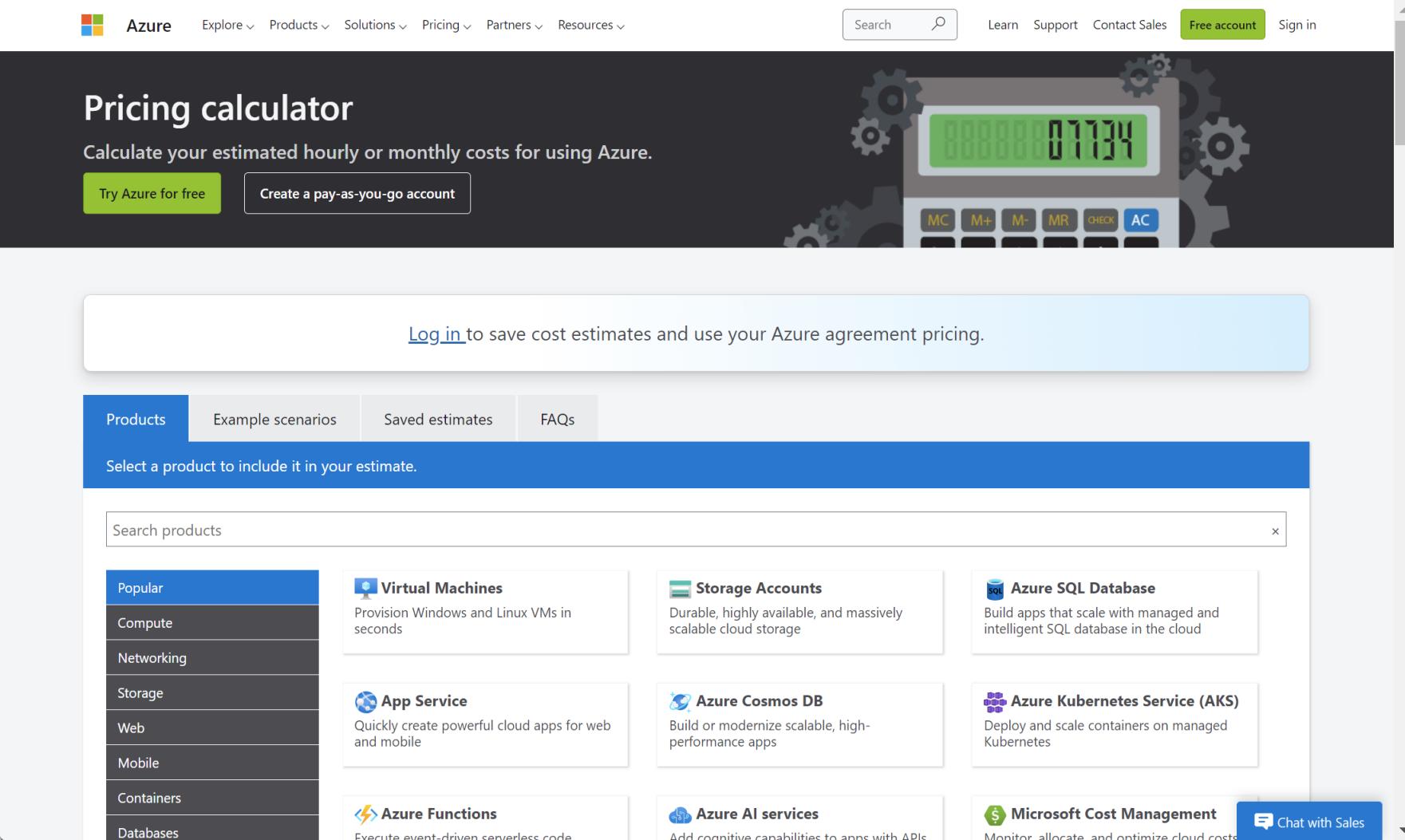
- Available online 24/7 with little to no costs
- Highly interactive and personalized advisor using AI
- Most services are from Azure AI: reliability, accountability

and easy cost management



<https://tutorials.botsfloor.com/the-chatbot-effect-in-the-world-of-financial-advice-6a478c51233a>

Business Case – Budget & Cost Management



The screenshot shows the Azure Pricing calculator interface. At the top, there's a navigation bar with links for Explore, Products, Solutions, Pricing, Partners, Resources, a search bar, and buttons for Learn, Support, Contact Sales, Free account, and Sign in. Below the header is a banner titled "Pricing calculator" with the sub-instruction "Calculate your estimated hourly or monthly costs for using Azure." It features two buttons: "Try Azure for free" and "Create a pay-as-you-go account". To the right of the banner is a graphic of a digital calculator with gears, displaying the number "01134". Below the banner is a callout box with the text "Log in to save cost estimates and use your Azure agreement pricing." A blue navigation bar below the callout contains tabs for "Products" (which is selected), "Example scenarios", "Saved estimates", and "FAQs". A sub-section titled "Select a product to include it in your estimate." follows. On the left, a sidebar lists "Popular" services: Compute, Networking, Storage, Web, Mobile, Containers, and Databases. To the right, there are cards for "Virtual Machines", "Storage Accounts", "Azure SQL Database", "App Service", "Azure Cosmos DB", "Azure Kubernetes Service (AKS)", "Azure Functions", "Azure AI services", and "Microsoft Cost Management". A "Chat with Sales" button is located at the bottom right.

<https://learn.microsoft.com/en-us/azure/cost-management-billing/costs/pricing-calculator>

Business Case – Budget & Cost Management

Microsoft Azure

Home > Cost Management + Billing - Cost analysis

Cost Management + Billing - Cost analysis

Microsoft - PREVIEW

Search resources, services, and docs

Create a resource

Home

Dashboard

All services

FAVORITES

All resources

Recent

Blueprints

Policy

Cost Management + Bill...

Security Center

Management groups

Resource groups

Virtual machines

App Services

SQL databases

Virtual machines (classic)

Cloud services (classic)

Subscriptions

Automation Accounts

Stream Analytics jobs

Storage accounts

IoT Hub

Cost analysis

Budgets

Cloudyn

Usage + charges

Credits

Reservation transactions

Departments

Accounts

Subscriptions

Properties

Notifications

Policies

Refresh

Tour

Export

How satisfied are you with cost analysis? →

Scope : SAB BVT ...

Custom view

Feb 2019

Granularity : Daily

Group by : Service name

Add filter

TOTAL \$10.6M BUDGET: SRIVATSK-MONTHLY... \$328.8K /day (est)

Feb 1 Feb 3 Feb 5 Feb 7 Feb 9 Feb 11 Feb 13 Feb 15 Feb 17 Feb 19 Feb 21 Feb 23 Feb 28

hdinsight sql database storage cloud services bandwidth azure cosmos db

sql data warehouse redis cache virtual machines event hubs Others Est daily budget

Service name

hdinsight \$4.8M

sql database \$1.4M

storage \$1.3M

cloud services \$1.2M

bandwidth

Location

us east \$5M

us west \$3.4M

us west 2 \$816.2K

us east 2 \$455.8K

eu north

Enrollment account name

aipdepth@microsoft.com \$4.9M

aipdepta@microsoft.com \$3.1M

aipdeptf@microsoft.com \$1.4M

ai-admin@microsoft.com \$780.2K

aipdepte@microsoft.com

The screenshot shows the Microsoft Azure Cost Management + Billing - Cost analysis dashboard. The main area displays a stacked bar chart of monthly costs from February 1 to 28, totaling \$10.6M, with an estimated daily cost of \$328.8K. The chart is broken down by service: hdinsight, sql database, storage, cloud services, bandwidth, azure cosmos db, sql data warehouse, redis cache, virtual machines, event hubs, Others, and Est daily budget. Below the chart are three donut charts showing costs by service name, location, and enrollment account name. The service name chart shows hdinsight as the largest component. The location chart shows us east as the largest. The enrollment account name chart shows aipdepth@microsoft.com as the largest.

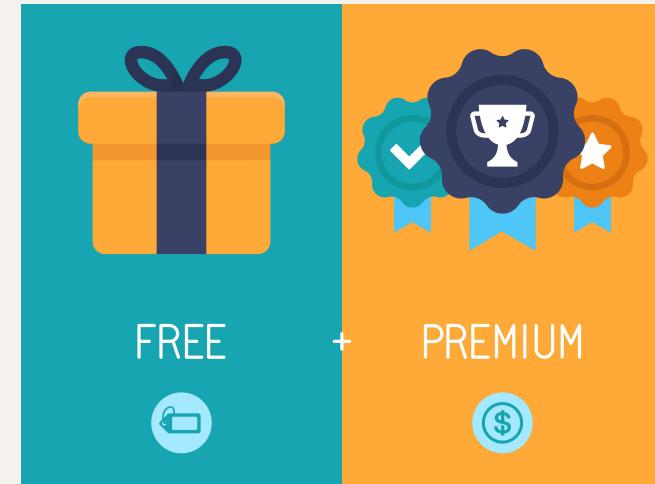
Business Case – Revenue

Freemium Model

- Free Tier: personal financial investment solutions and educational content
- Paid Tier: ads free, stock analysis, estimation of return, etc.

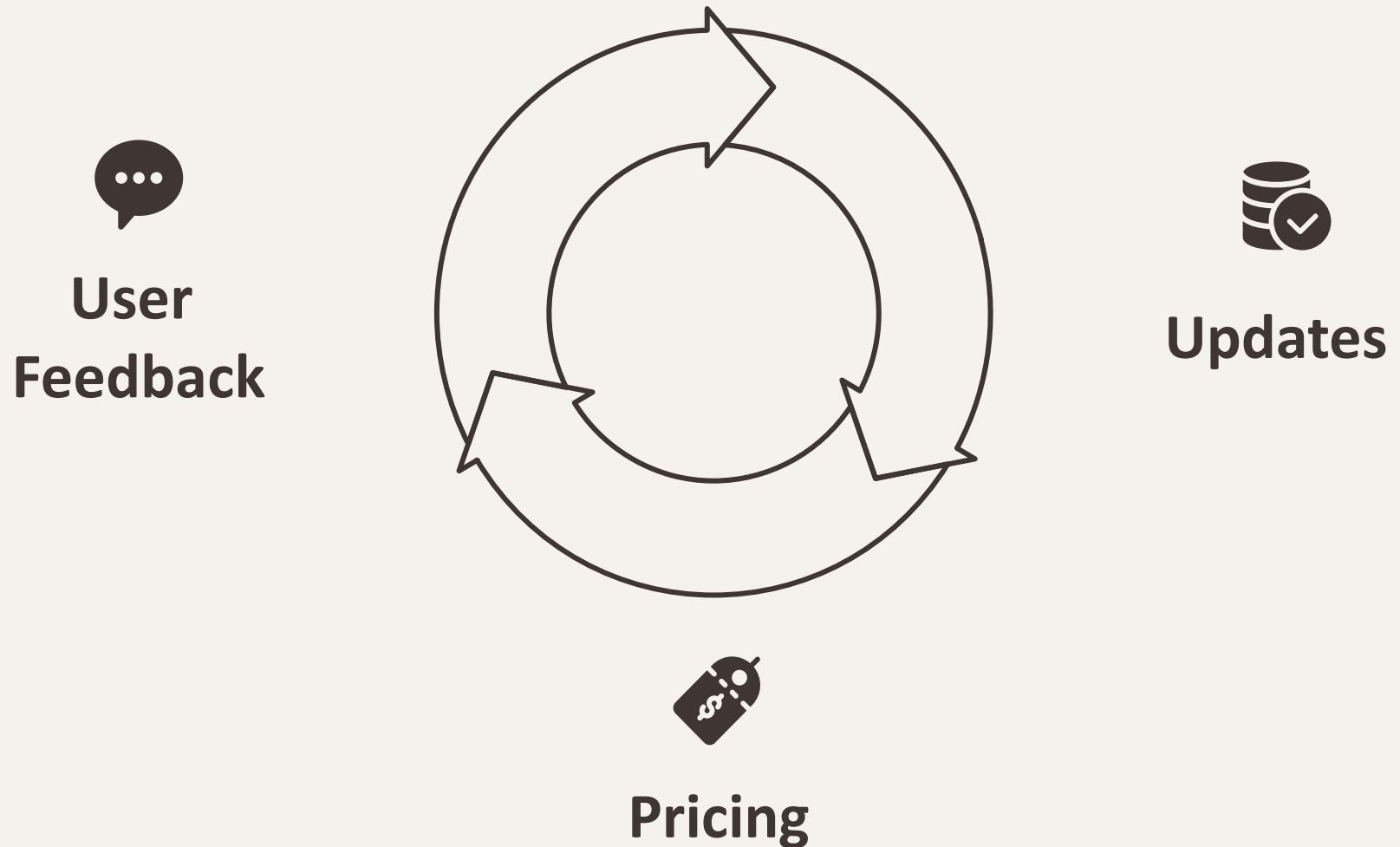
Advertising Revenue

- Display relevant ads on the website
(banking, investment products, etc)



<https://botpenguin.com/glossary/freemium>

Business Case – Project Maintenance



Data Sources and System Pipeline Sequence

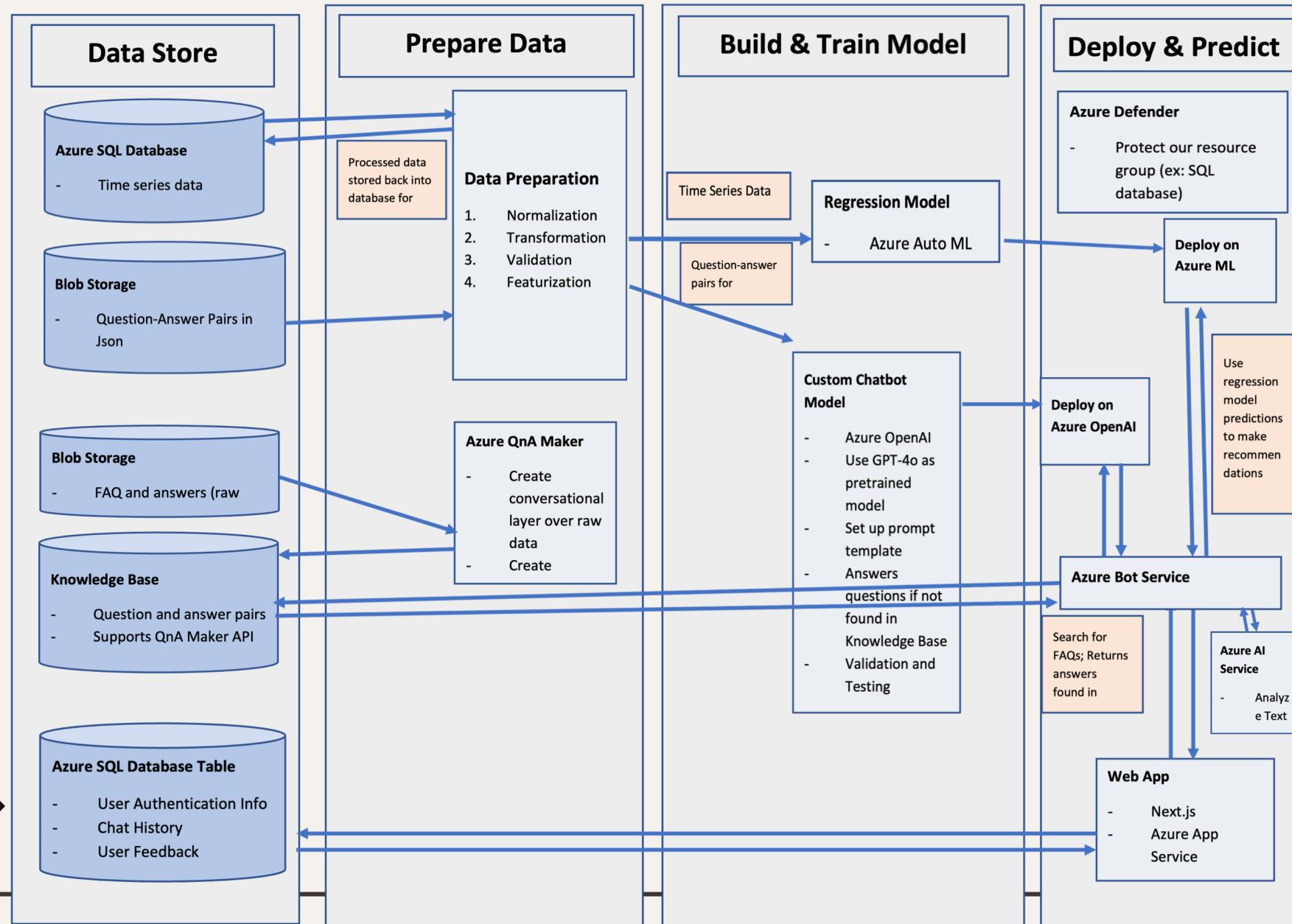
Data Sources

Yahoo Finance →

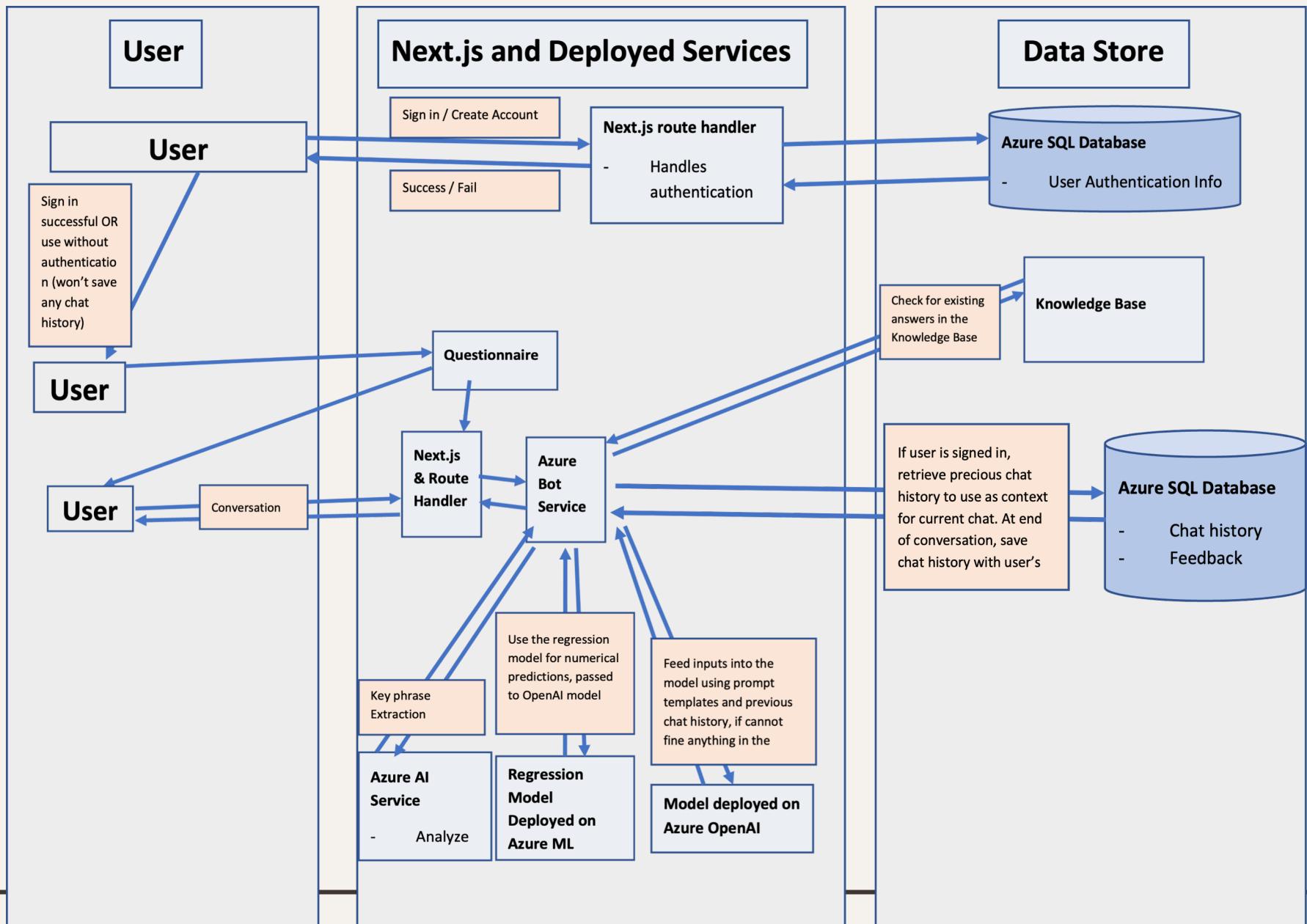
Team Members →

Team Members →

Web App →



User Interaction





Hi! We're excited to help you achieve your financial goals with personalized investment recommendations. To get started, we'd like to gather some important information about you. This will help us provide more accurate and tailored advice.

Important Note:

- **Optional:** Filling out this questionnaire is entirely optional. You can skip any questions you don't feel comfortable answering.
- **Privacy:** Your information is strictly confidential and will not be shared with anyone. We value your privacy and ensure that your data is secure.
- **Permission:** The information you provide will only be saved with your explicit permission.
- **Accuracy:** Providing complete and accurate information will enable us to offer recommendations that best suit your unique situation.

Let's get started with a few questions about your financial background and goals. This will only take a few minutes!



About you

Age

19

Occupation

student



Financial Information

Annual Income (CAD)

0

Net Worth (CAD)

0

Investment Preferences

Investment Goals

buy a car

Risk Tolerance

moderate

Investment Duration

Select Investment Duration

Submit Questionnaire

Measuring Impact



Positive Impact

Improves the financial literacy of the users. Acts as personalized planning tool.



How to measure it?

By conducting user surveys and collecting feedback from the users.



Mitigating Negative Impact

Prioritizing data privacy and security. Ensuring fairness and accuracy of the chatbot's advice.

Ethical Considerations

- **Anonymity:** Microsoft Entra ID, Azure Defender
- **Consent:** collected data is consented to by user
- **Safety:** testing/reporting unsafe responses; OpenAI model pretested
- **Fairness:** prompt engineering
- **Transparency:** model explains choices



Areas for Future Research



Enhancing stock prediction
algorithms



Improving user interaction
experience



Mitigating biases and
increasing transparency

Thank you for
listening

Do you have any questions?