Project Plan Presentation
Shareholder Engagement Chatbot

The Capstone Experience

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Project Sponsor Overview

- Financial services company
- Nation’s largest all-digital bank
- HQ in Detroit, MI
Project Functional Specifications

- Context-aware chatbot
- Based on Ally’s investor-focused materials
- Answer shareholder questions
- Provide source citations
- Refuse to disclose private information
- Designed to improve investor engagement
Project Design Specifications

- Ally themed UI
- Example questions section
- Typing status
- Clear chat feature
- Admin section/panel
Screen Mockup: Initial Chatbot Screen
Screen Mockup: Example Question Response
Screen Mockup: Generating Response
Screen Mockup: User Question Response

While we do not currently provide cryptocurrency spot trading, we do offer alternative options such as crypto-specific funds and stocks. These alternatives allow for indirect exposure to the crypto market without the need for actual coins or a wallet. It’s crucial to note that these offerings are not recommendations and remains susceptible to volatility, annual fees, and other individual costs.
Screen Mockup: Information Refusal
Project Technical Specifications

- Powered by Azure OpenAI & AWS
- React frontend & Flask backend
- Amazon Cognito & ACM for authentication
- Amazon RDS & S3 for data storage
- Amazon ELB & ingress-nginx for traffic handling
- Amazon ECR & GitLab for CI/CD
- Amazon EKS for deployment
Project System Architecture
Project System Components

- **Software Platforms / Technologies**
  - React & Flask
    - WebStorm & PyCharm
  - LangChain & Azure OpenAI
  - GitLab
  - Amazon Web Services
    - ELB, Route 53, Cognito, ACM, EKS, S3, RDS, ECR
  - Nginx & Ingress-nginx
Project Risks

• Data Extraction/Processing
  ▪ Converting diverse data sources into common format
  ▪ Python libraries and LangChain tooling for PostgreSQL

• Source Citing to Prevent LLM Hallucination
  ▪ LLM must provide factual info only, esp. in investor relations
  ▪ LangChain tooling and advanced prompting methods

• Keeping the LLM on Topic
  ▪ Chatbot should be limited to topics relevant to Ally
  ▪ Fine-tuning or second LLM to evaluate responses

• Scalability and Minimizing Costs
  ▪ Ensuring efficient handling of large # of requests
  ▪ Robust AWS cloud infrastructure and monitoring token usage
Questions?