MICHIGAN STATE
UNIVERSITY

Project Plan Presentation
Digital Avatar Assistant

The Capstone Experience

Team Ally

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Fall 2021

From Students…
…to Professionals

Functional Specifications

- College students less financially knowledgeable

- AI bot will help young people budget

- Provide insights on spending habits

- Help describe options for investing

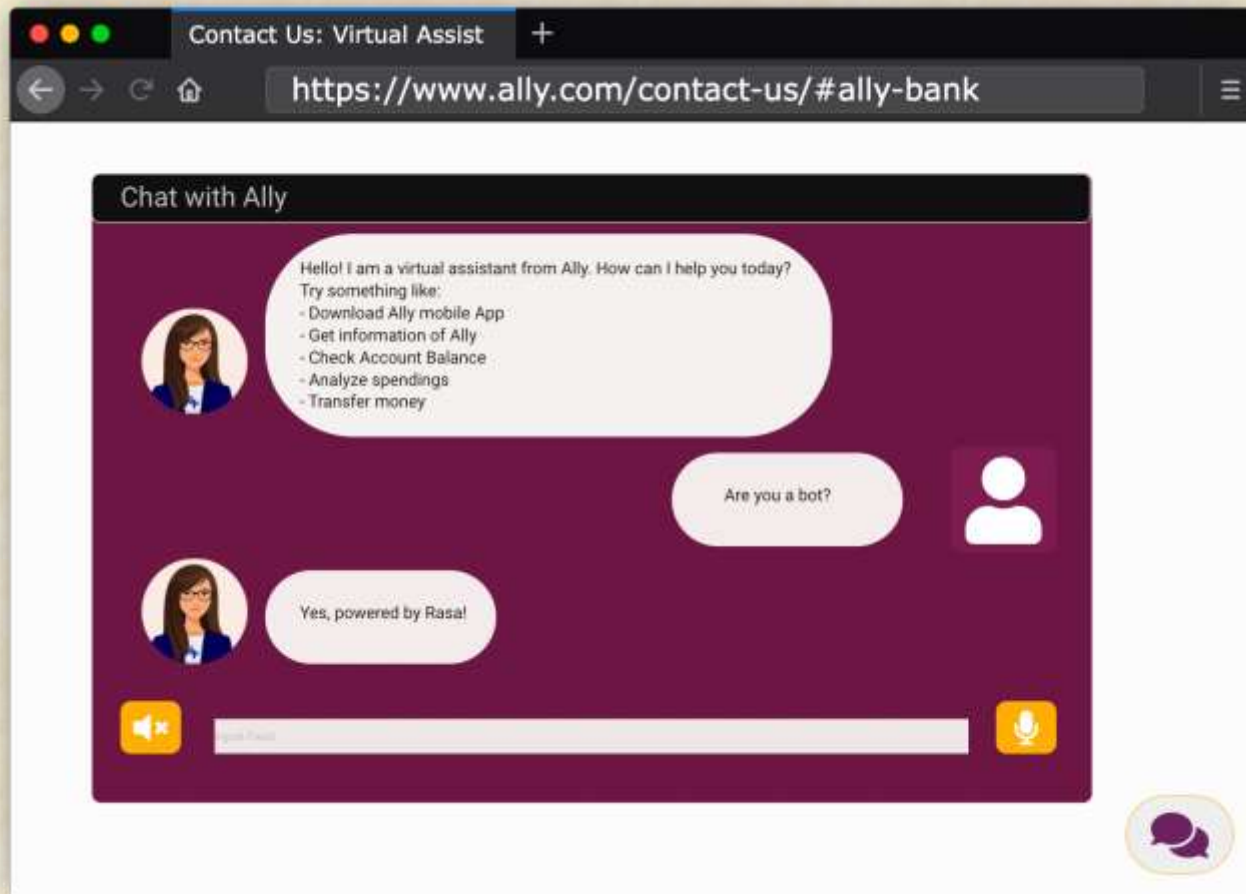- Advise user on saving for retirement given income/savings
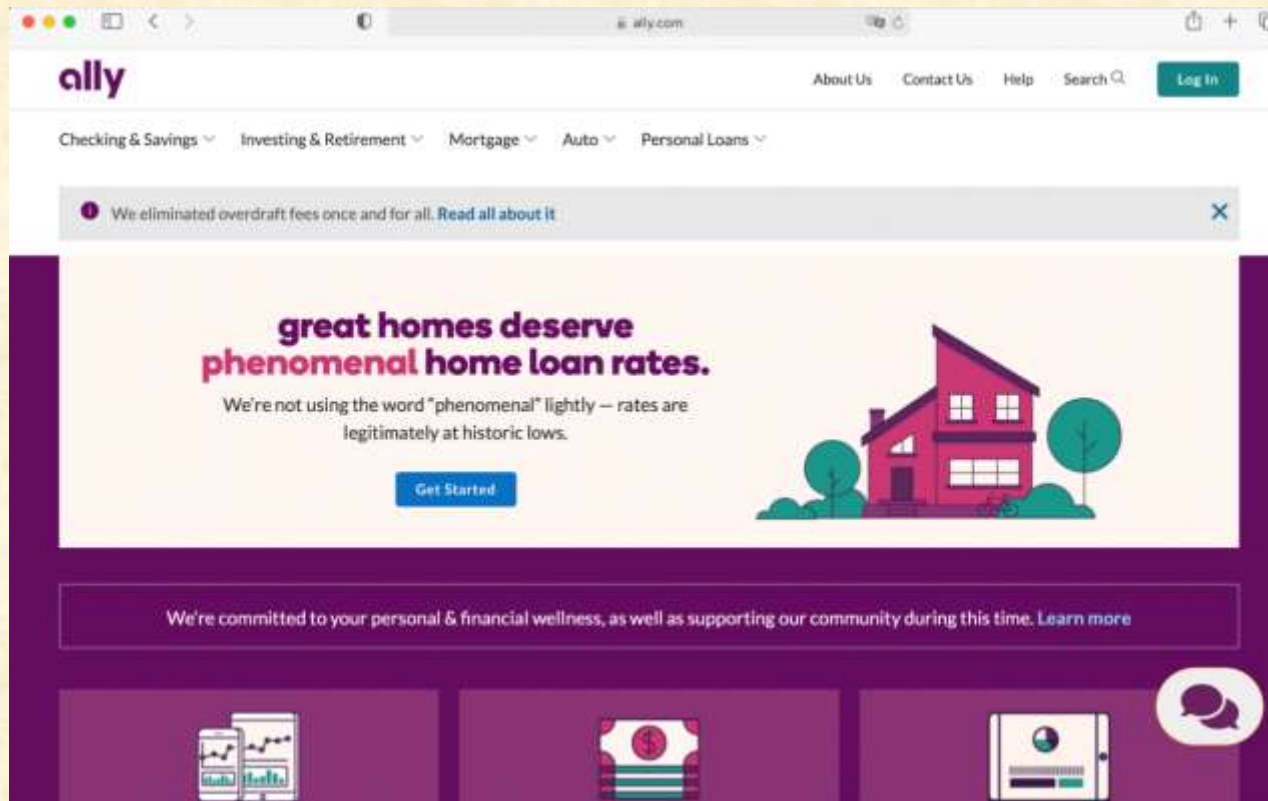
Design Specifications

- Digital Animated Avatar

- Chatbot button activates small window

- Multiple methods of communication
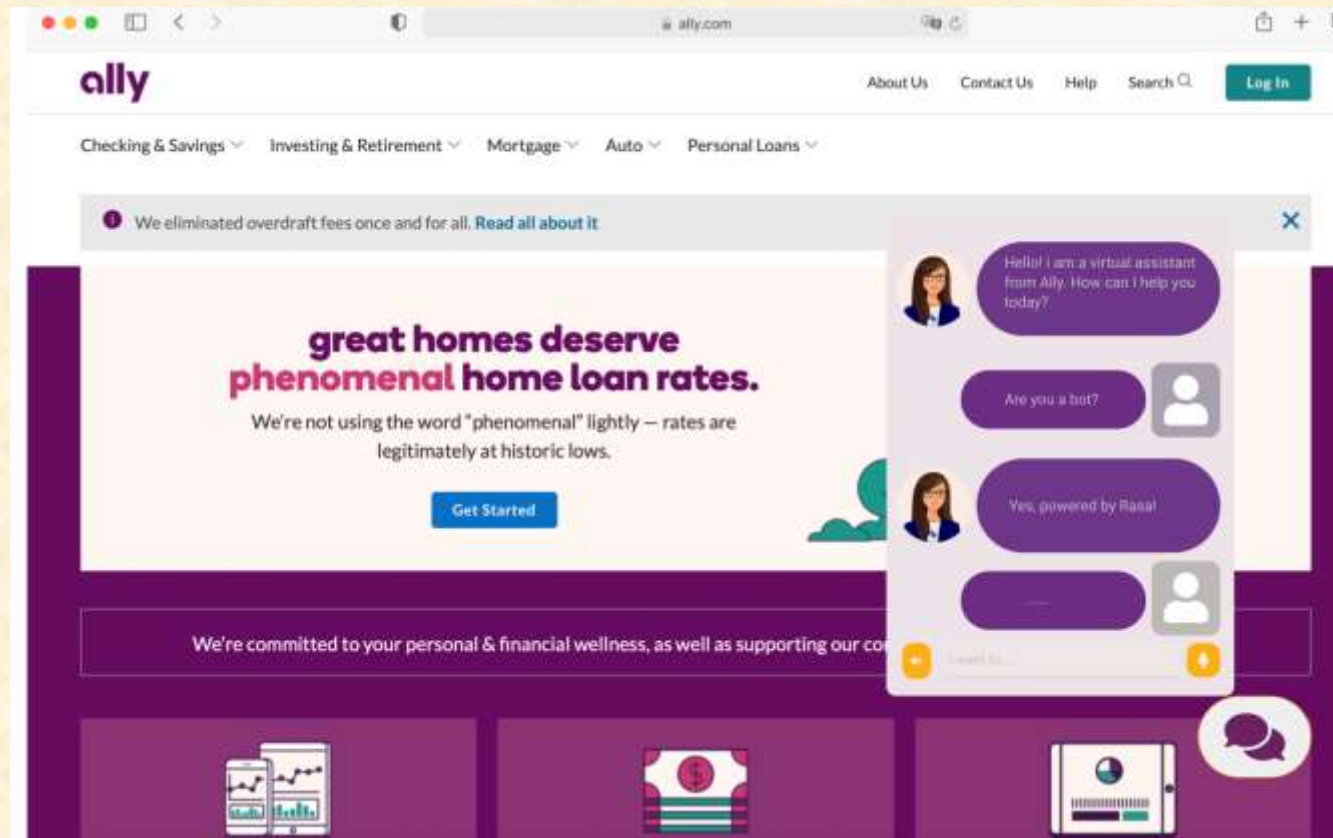
- Graphs from user data presented to user

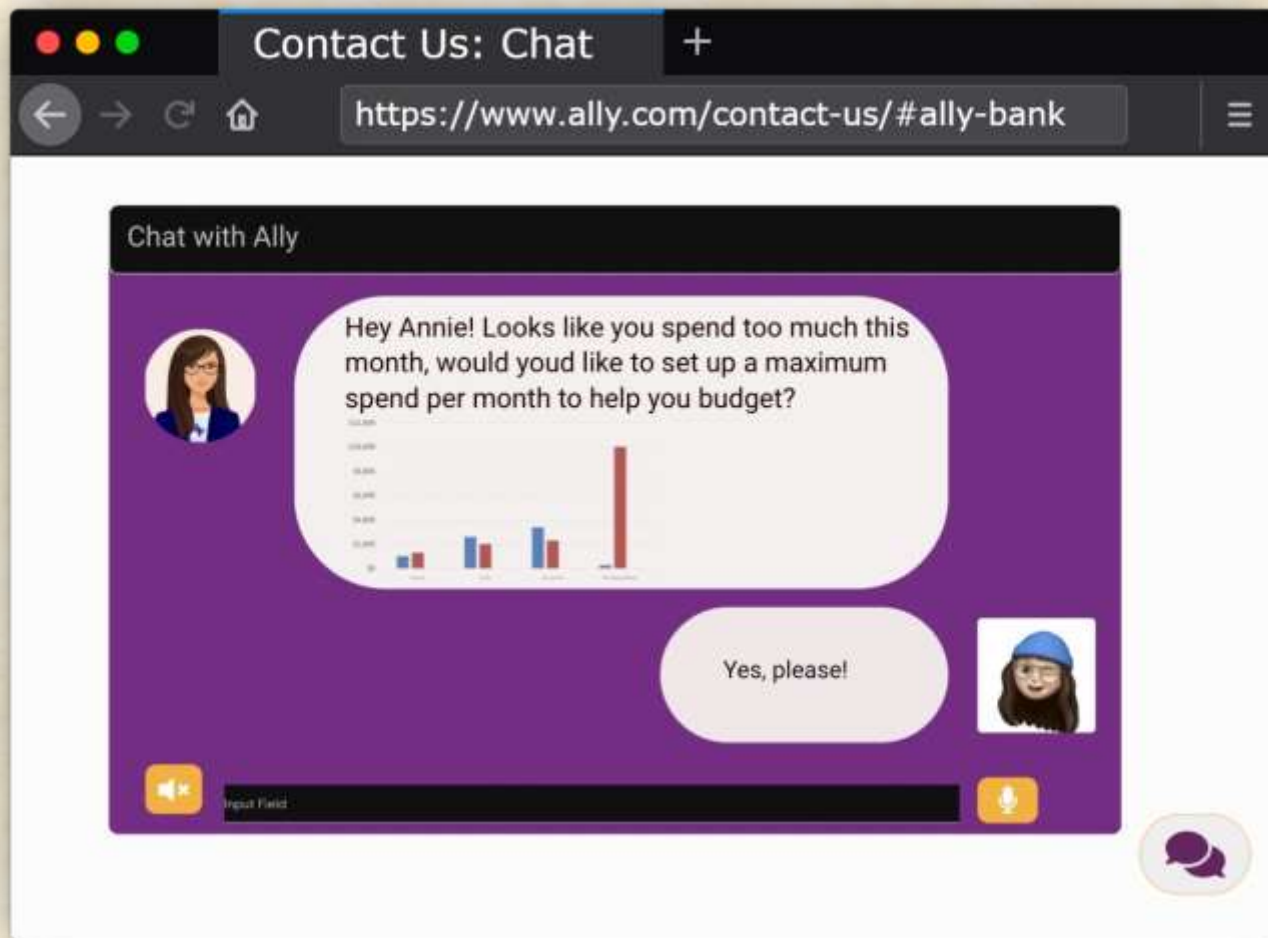# Screen Mockup: An expanded view of a designed chatbot interaction

Screen Mockup: The chatbot button, shown in the context of the website.

Screen Mockup: The chatbot, opened, as viewed on the Ally website.

# Screen Mockup: The virtual assistant helping with budgeting

Technical Specifications

- User interacts with bot through React UI
- UI gets speech or text input from the user
- Speech input is translated to text for Rasa
- Rasa determines the user's intent, what action should be taken and how to respond
- AI carries out our custom machine learning actions when it determines it necessary
- Rasa returns the response it thinks best fits
- Text output from Rasa is changed into lifelike speech
- Output is given the user in text and speech form in our UI

System Architecture
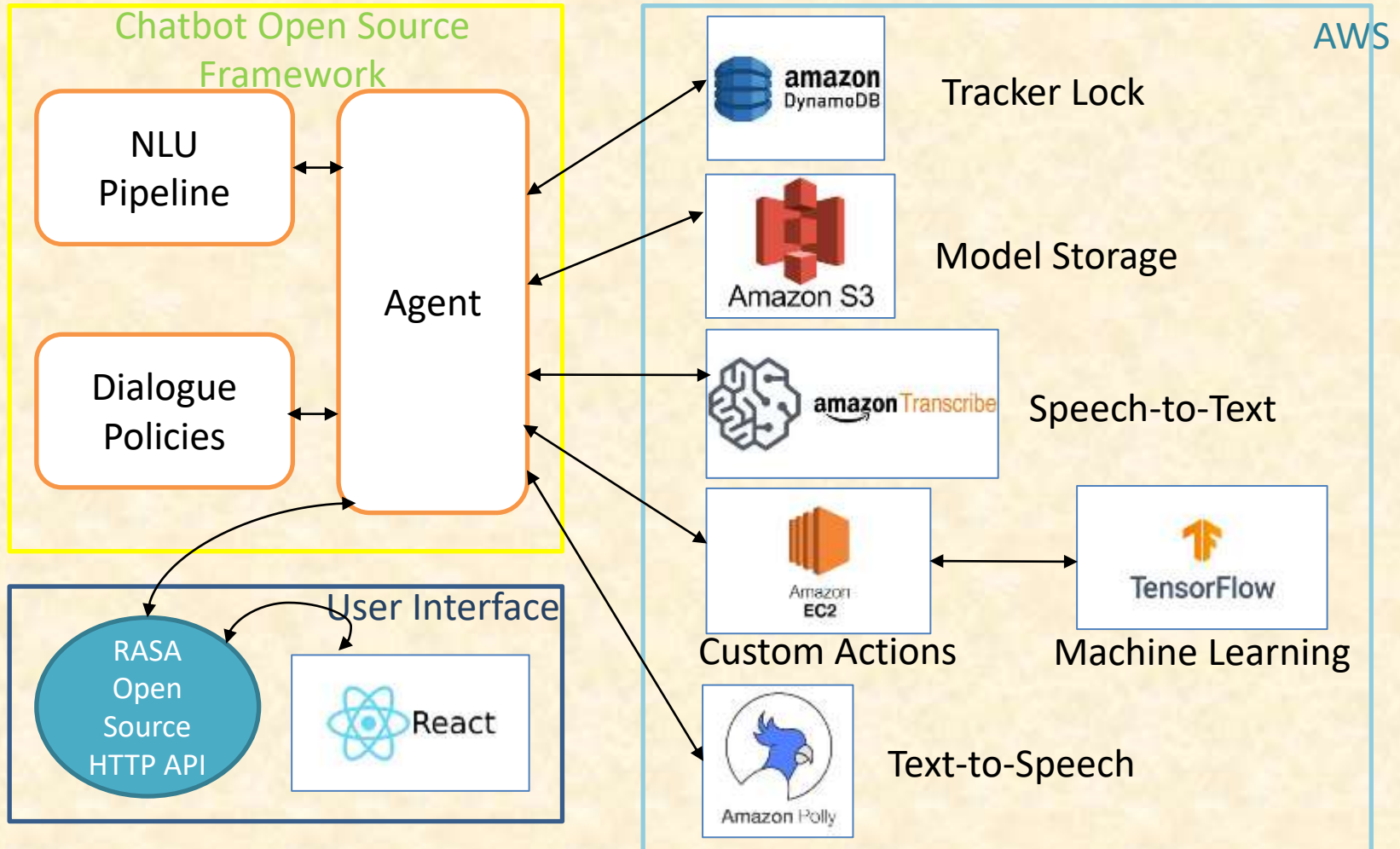
System Components

- Software Platforms / Technologies
  - AWS:
    - Amazon Transcribe, Amazon Polly, DynamoDB, Amazon S3, Amazon EC2
  - Python:
    - TensorFlow
  - Rasa:
    - Rasa Open Source, Rasa X, Rasa HTTP API
  - JavaScript:
    - React

Risks

- **Integrating our application with preexisting Ally application**
  - Rasa Agent can directly communicate with web application through Rasa's REST API, though we're not certain this method will work.
  - Directly work with Ally engineers to determine which methods of communication with Rasa's REST API will be possible.
- **Allowing chatbot to directly communicate with User Data**
  - Our application may be unable to retrieve user data necessary for the intended use cases, as banking information is often highly confidential
  - Make sure backend team is familiar with database retrieval and API communication techniques, and work with Ally engineers for a solution.
- **Ensuring chatbot has sufficient machine learning capabilities**
  - Our team is not certain if the out-the-box Rasa OS Framework ML capabilities will adequately solve our problem statements
  - Begin work on ML aspects ASAP, and routinely test our chatbot for improving customer satisfaction.

Questions?

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