

MICHIGAN STATE

UNIVERSITY

Project Plan

Sentiment & Emotional Analysis of Video
Interviews

The Capstone Experience

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*From Students...
...to Professionals*

Functional Specifications

- Hiring teams need unbiased information in their evaluation of job candidates
- Developing automated sentiment/emotion analysis for job interviews
- Create web application that provides:
 - recording and playback for video interviews
 - emotion/sentiment summary of these videos

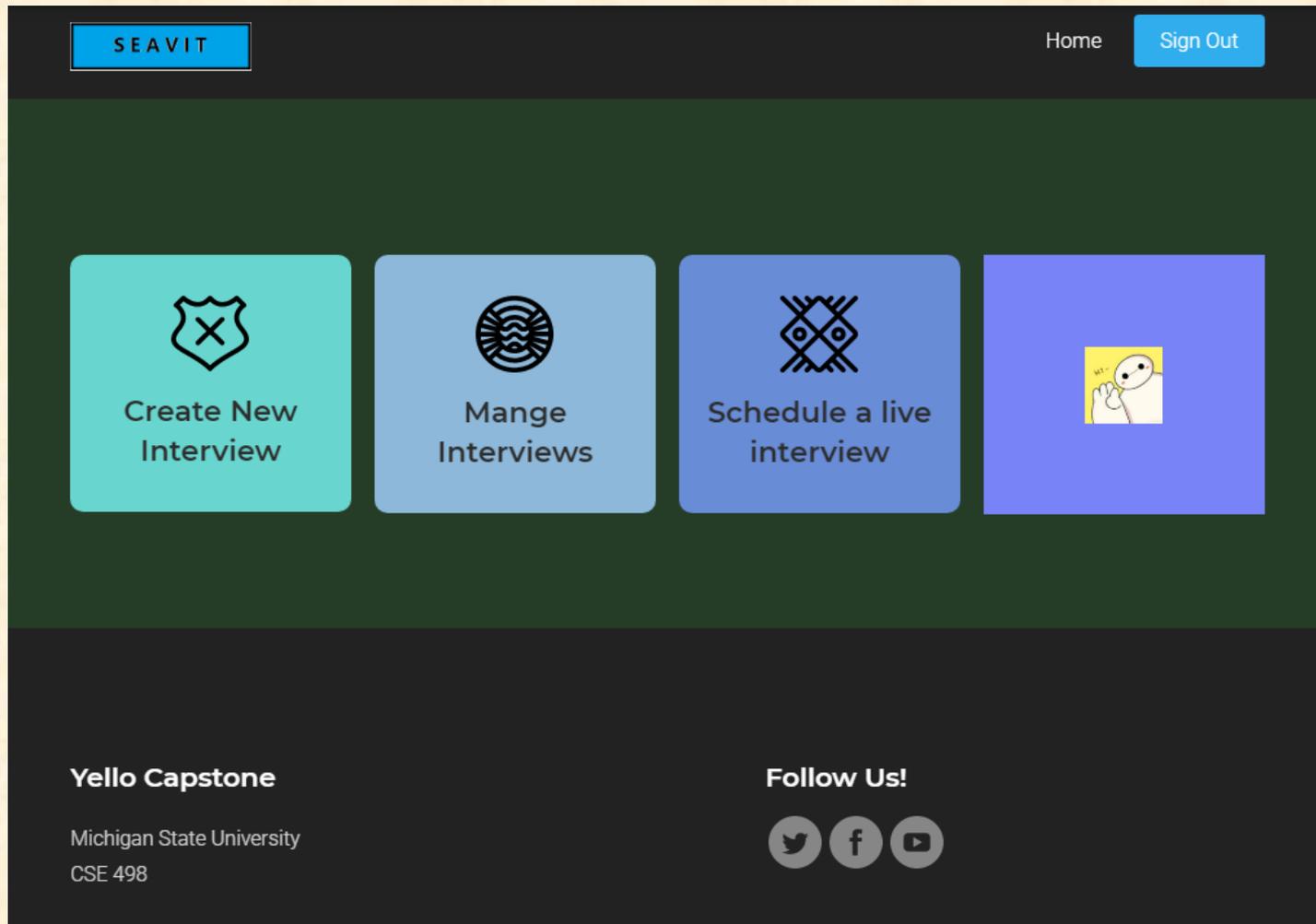


Design Specifications

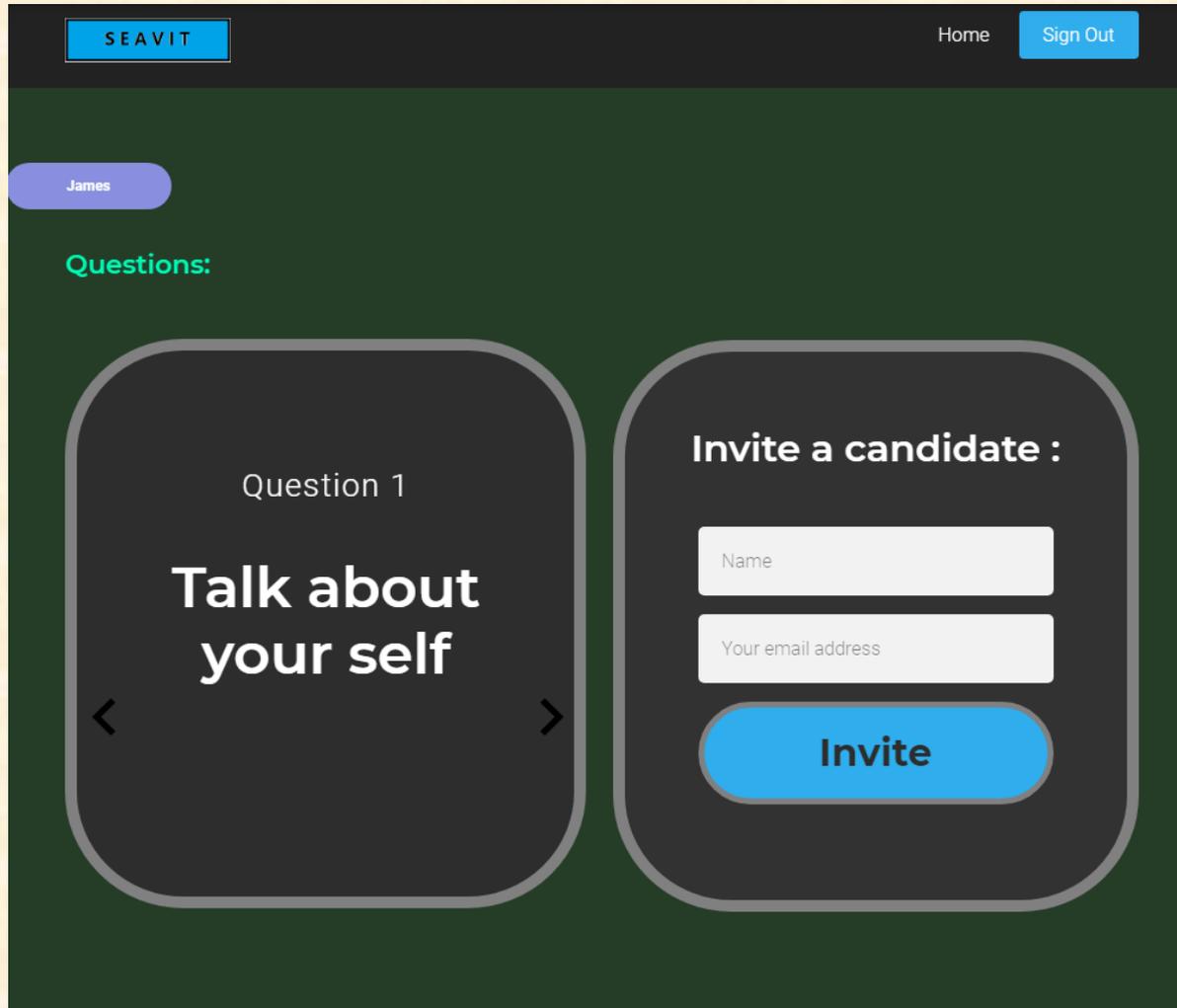
- Staff capability
 - Create new interviews
 - Manage interviews
 - View emotion/sentiment analysis
 - Schedule live interviews
- Candidates capability
 - Record answers for interview questions
 - Review answers and finalize response
 - Check deadlines for each question



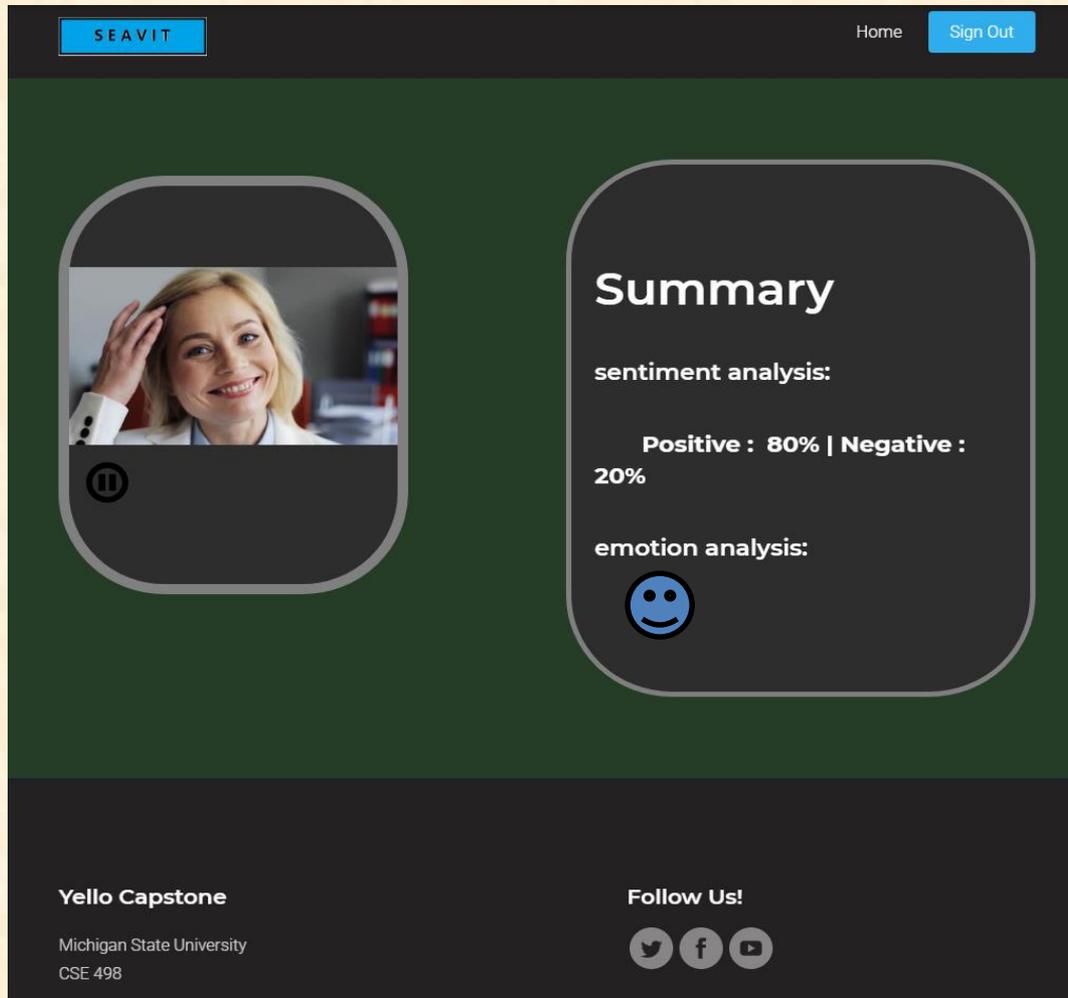
Screen Mockup: Staff Management Page



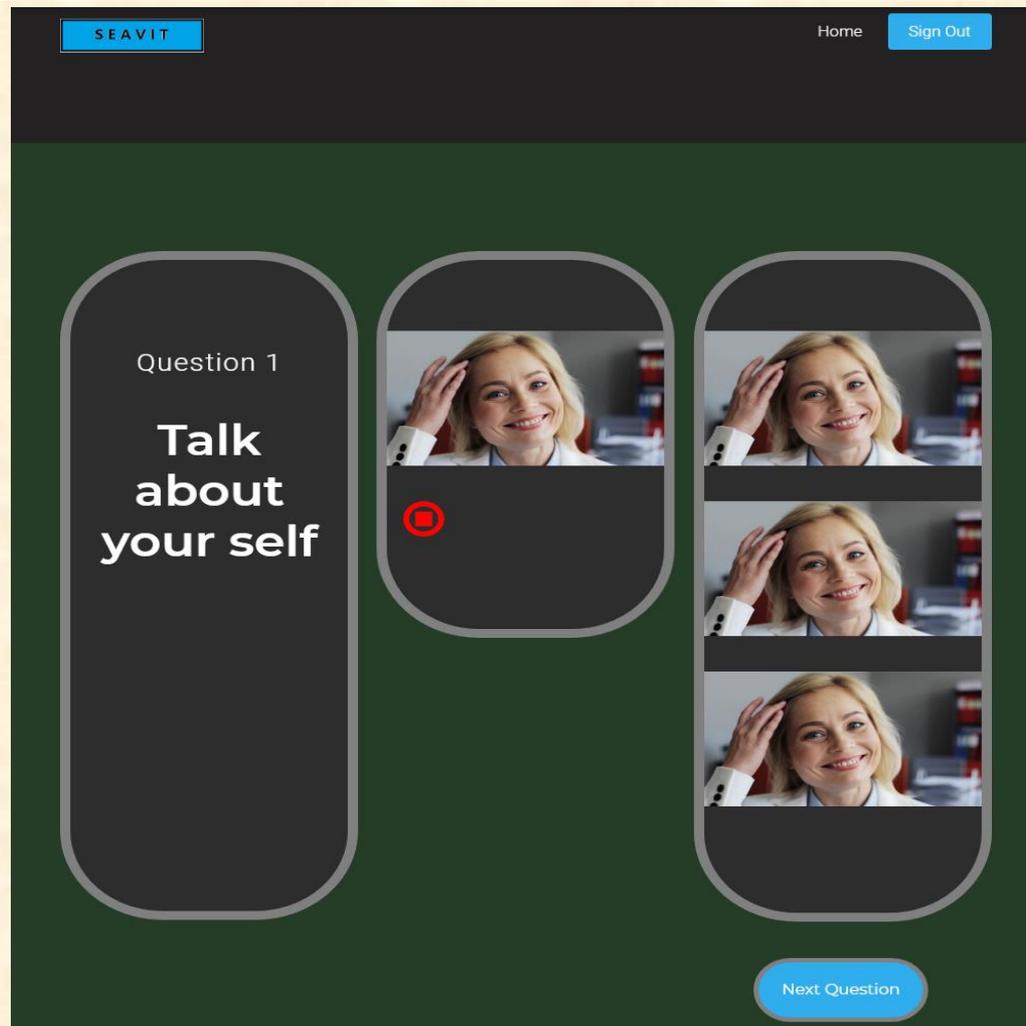
Screen Mockup: Interview Configuration Page



Screen Mockup: Interview Result Page



Screen Mockup: Interview Recording Page

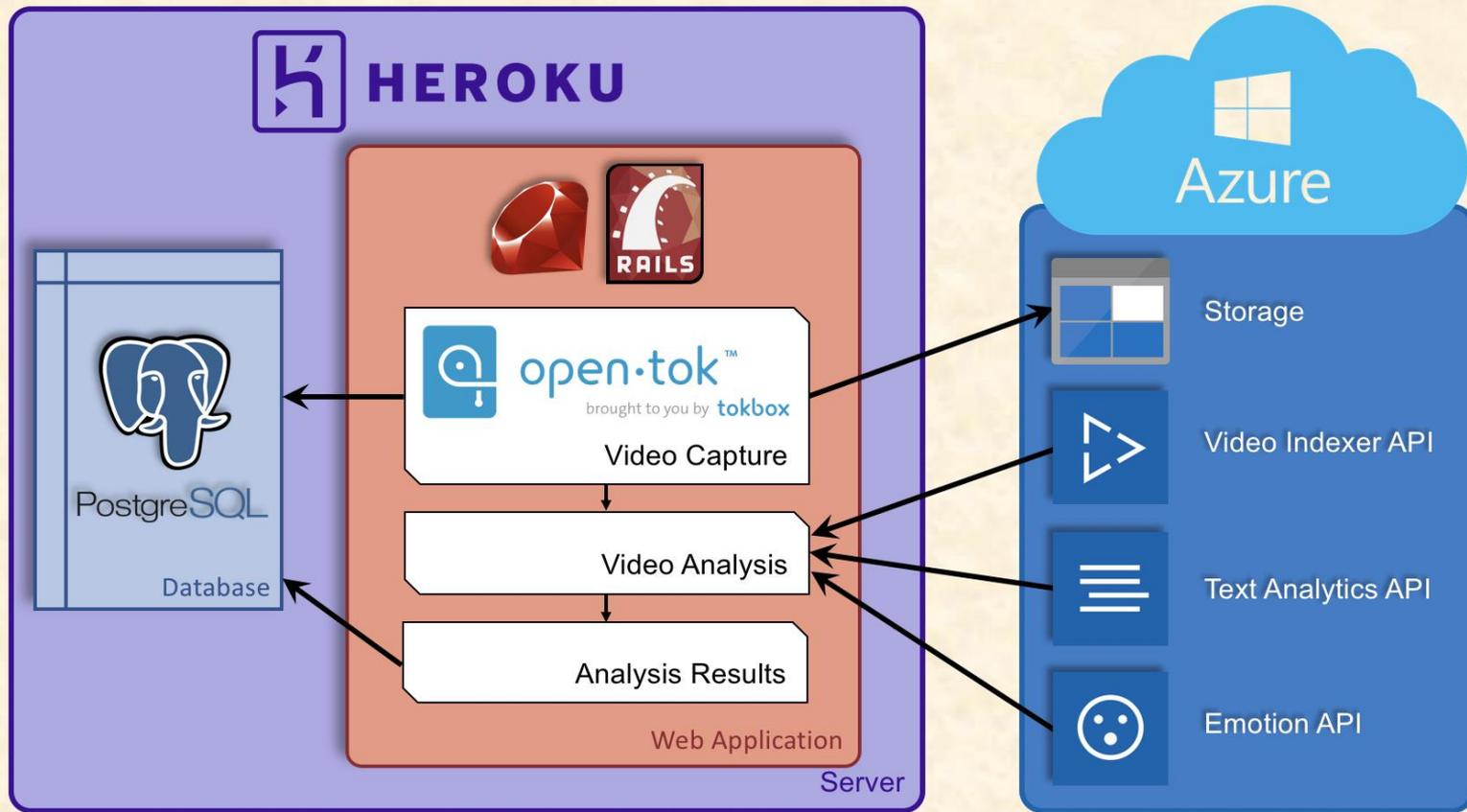


Technical Specifications

- Video Recording/ Streaming/ Storage
 - OpenTok API by TokBox
 - Speech-To-Text
 - Azure Storage
- Sentiment & Emotional Analysis
 - Azure Emotion API
 - Azure Text Analytics API
 - Azure Video Indexer API



System Architecture



System Components

- Hardware Platforms
 - iMacs running Windows 10 in VMware
 - Built in webcam & microphone
- Software Platforms / Technologies
 - Ruby on Rails
 - PostgreSQL & Azure Cloud Storage
 - Heroku Server
 - HTML/CSS/JavaScript/Bootstrap
 - Microsoft Cognitive Services



Risks

- **Functionality and Integration of APIs with Ruby on Rails**
 - The web app will need to make API calls to run speech recognition, emotion detection, and sentiment analysis.
 - Review documentation for the APIs and build small demos using sample inputs from our own videos.
- **Capturing Video**
 - The web app will need to be able to capture the video interviews to be put through analysis.
 - Review documentation for OpenTox API and build prototype to test.



Risks

- **Transcribing Audio for Sentiment Analysis**
 - To perform sentiment analysis, the team will need to use the audio from the videos and transcribe the speech to text.
 - Review documentation for speech recognition APIs and build small prototypes to test API performance.
- **Uploading and Retrieving Video**
 - No familiarity with archiving videos to Microsoft Azure cloud storage.
 - Review options for Azure Storage and OpenTok archiving documentation to implement a demo that archives & retrieves a video from Azure using OpenTok API.



Questions?

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