

# Digital Coach

## Summary

Digital Coach aims to provide real-time feedback to video-recorded interview questions to potential candidates in the job market with feedback driven from AI models surrounding audio, context, and visual cues seen by recruiters and companies. This product will allow job candidates to better prepare for and understand how to exhibit the traits desired for a job position, and how to improve their interviewing skills to match those traits.

Digital Coach will be developed as a web application accessible from the browser, mimicking the “Hirevue” style interviews that are prevalent during virtual interviewing during the pandemic. The application will be developed in mostly Javascript, with Python driving the machine learning models on the backend.

## Technical Plan

This section will describe the software and services we plan to use when developing the software for Digital Coach:

<u>Category</u>	Tool/Technology Used
<b>Communications</b>	
Email	Outlook
Web Conferencing	Zoom
<b>Collaboration</b>	
Documentation File Storage	Google Drive
File Sharing/Change Tracking	Github
Task Delegation	Notion
<b>Web Development</b>	
Environment	Windows, Mac OS, Linux
Browsers Supported	Chrome, Firefox

Frontend	React, NodeJS, Jest, Typescript
Backend	Express.JS, NodeJS, Jest, Typescript
Database	MongoDB
Machine Learning Container	TBD
Deployment	Heroku

## Team Members

### **Susmitha Shailesh**

Role: Project Manager

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## **Project Leaders**

### **Matthew Wade**

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### **James Curley**

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## **Delegation of Tasks**

### **Susmitha Shailesh**

#### **Tasks Assigned for Past Week**

- Create user stories
- Develop flow diagrams for UX
- Send out UX flow diagrams to board members to gather feedback

#### **Tasks Completed for Past Week**

- Created user stories
- Developed flow diagrams for UX
- Sent out UX flow diagrams to board members to gather feedback

#### **Tasks Assigned for Next Week**

- Test and develop ML models for text sentiment analysis
- Gather feedback on UX flow diagrams

### **Michael McCreesh**

#### **Tasks Assigned for Past Week**

- Continue to implement and test ML models for video sentiment analysis
- Develop flow diagrams for UX

#### **Tasks Completed for Past Week**

- Continued to implement and test ML models for video sentiment analysis
- Developed flow diagrams for UX

#### **Tasks Assigned for Next Week**

- Develop and test ML models for video sentiment analysis
- Recieve feedback on UX flow diagrams from board members

### **Hamzah Nizami**

#### **Tasks Assigned for Past Week (these tasks are expected to take multiple weeks)**

- Interview a member of the Career Center to understand their perspective on how the interview process goes for students
- Implement, test, and refine models for text sentiment analysis.

#### **Tasks Completed for Past Week**

- Implement, test, and refine models for text sentiment analysis.
- Scheduled interview with Career Center member

#### **Tasks Assigned for Next Week**

- Implement, test, and refine models for text sentiment analysis.

### **Max Shi**

#### **Tasks Assigned for Past Week**

- Get feedback on user stories from advisory board
- Implement designed ML model
- Begin to train ML model for contextual analysis

#### **Tasks Completed for Past Week**

- Get feedback on user stories from advisory board
- Implement designed ML model
- Begin to train ML model for contextual analysis

#### **Tasks Assigned for Next Week**

- Continue to train model for contextual analysis

## Aparajita Rana

### Tasks Assigned for Past Week

- Learn basics on video sentiment analysis
- Test combinations of ML models to work with for video sentiment analysis
- Obtain and split training and testing data set

### Tasks Completed for Past Week

- Learn basics on video sentiment analysis
- Test combinations of ML models to work with for video sentiment analysis
- Obtain and split training and testing data set

### Tasks Assigned for Next Week

- Implement and test ML model for video sentiment analysis

## Ming Lin

### Tasks Assigned for Past Week

- Explore Front end architecture and technologies for upcoming semester
- Explore Back end architecture and technologies for upcoming semester
- Explore implementation of models

### Tasks Completed for Past Week

- Explore Front end architecture and technologies for upcoming semester
- Explore Back end architecture and technologies for upcoming semester
- Explore implementation of models

### Tasks Assigned for Next Week

- Stand up front-end and back-end frameworks
- Implement and test ML model for audio sentiment analysis

## Completion Schedule:

Key: **Green** - completed, **Yellow** - in progress, **Red** - blocked, **Unhighlighted** - not begun

## Fall 2021

Goal	Create System Architecture Diagram	Due Date
KPI 1	Create System Architecture Diagram	
Task	Define frontend framework	10/28/2021
Task	Define backend framework and database platform	10/28/2021

Task	Define container for ML model	10/28/2021
Milestone	Readable backend diagram	11/4/2021
Task	Determine how each part interacts with each other	11/11/2021
<b>Goal</b>	<b>Implement the Model</b>	<b>Due Date</b>
<b>KPI 1</b>	<b>Evaluate 1 Interview Response</b>	
Task	Review previous research on ML model and any further research	10/28/2021
Task	Determine ML algorithm	10/28/2021
Task	Implement ML framework	11/11/2021
Milestone	Working ML algorithm given a question	11/11/2021
Task	Collect training data	11/18/2021
Task	Conduct model training and generate graph of results	11/23/2021
Task	Analyze graph and make changes to algo and repeat	12/2/2021
<b>Goal</b>	<b>Project Management Strategy</b>	<b>Due Date</b>
<b>KPI 1</b>	<b>Setup Development Environment</b>	
Task	Set up and invite all members to github repo	10/14/2021
Task	determine SDLC	10/14/2021
Task	and set up kanban board	10/14/2021
Task	set up testing framework and CICD	10/14/2021
<b>Goal</b>	<b>Generate Wireframe &amp; Use Cases</b>	<b>Due Date</b>
<b>KPI 1</b>	<b>Create UX Scheme</b>	
Task	Research and determine most valuable use cases for MVP	11/11/2021
Task	Develop user stories	11/18/2021
Task	Define UX flow	11/23/2021
Task	Develop flow diagrams for UX	12/2/2021
<b>KPI 2</b>	<b>Create Design Plan</b>	
Task	Design website interactions (bare bone figma)	Spring
Task	Determine visual design elements (color scheme, logo, etc.)	Spring
Task	Combine website interactions with visual design characteristics	Spring
<b>Goal</b>	<b>Validate MVP Goals</b>	<b>Due Date</b>
<b>KPI 1</b>	<b>Validate MVP concept value</b>	
Task	Review and analyze previous research regarding value prop	10/14/2021
Task	Identify key stakeholders	10/14/2021
Milestone	1 dynamic meeting per small stakeholder group	10/28/2021
Milestone	x survey responses per large stakeholder group	10/28/2021
Task	Receive feedback on use cases from stakeholders	11/30/2021

Goal	Construct Advisory Board	Due Date
<b>KPI 1</b>	Have approval from advisory board on major product content decisions	
Task	Identify roles and responsibilities of board members - stay in close contact to get feedback and advice, create plan to meet consistently	10/14/2021
Task	Make contact with professionals who can provide feedback on product	10/17/2021
Milestone	Finalize 5 advisory board members	11/18/2021
Task	Send out UX flow diagrams to board members to gather feedback	11/29/2021

## Spring 2022

Goal	Develop and Deploy Frontend	Due Date
<b>KPI 1</b>	<b>Create Design Plan and Implement</b>	
Task	Design website interactions (bare bone figma)	1/20/2022
Task	Determine visual design elements (color scheme, logo, etc.)	1/27/2022
Task	Combine website interactions with visual design characteristics	4/14/2022
<b>KPI 2</b>	<b>Develop frontend</b>	
Task	Stand up application ( React, Next(?) )	1/20/2022
Task	Implement Frontend architecture	1/27/2022
Task	Implement UI kit and styling ( SCSS, Tailwind, MUI (?) )	1/27/2022
Milestone	Implement component library	1/27/2022
Task	Implement views	1/27/2022
Task	Implement Unit testing framework (Jest, enzyme)	1/27/2022
Milestone	Set up CI	1/27/2022
Task	Implement state management ( React Query (?) )	1/27/2022
Task	Implement authentication feature	2/3/2022
Task	Implement user profile feature	2/10/2022
Task	Implement video recording feature	3/3/2022
Task	Implement feedback/data analytics feature	4/7/2022
Task	Fit and finish	4/14/2022
Goal	Develop and Deploy Backend	Due Date
<b>KPI 1</b>	<b>Develop Backend</b>	
Task	Develop architecture agreement between frontend and backend (MVC)	1/20/2022
Task	Create API endpoint list and basic documentation	1/27/2022
Task	Deploy Storage buckets	1/27/2022
Task	Deploy database and schemas	1/27/2022
Task	Implement unit testing (jest)	1/27/2022
Task	Set up CI	1/27/2022
Task	Implement authentication feature	2/3/2022
Task	Implement user profile feature	2/10/2022

Task	Implement video recording feature	3/3/2022
Task	Implement feedback/data analytics feature	4/7/2022
Task	Fit and Finish	4/14/2022
<b>Goal</b>	<b>Develop and Deploy Machine Learning Models</b>	<b>Due Date</b>
<b>KPI 1</b>	<b>Deploy the ML models</b>	
Task	Verify results from the NLP model	1/25/2022
Task	Verify results from the CV model	2/1/2022
Task	Verify results from the audio model	2/1/2022
Task	Verify results from the context analysis model	2/8/2022
Milestone	Integrate all ML models together and establish means of communication	2/15/2022
Task	Determine deployment method	2/15/2022
Milestone	Deploy ML models	2/22/2022
<b>Goal</b>	<b>Consistently Communicate with Advisory Board</b>	<b>Due Date</b>
<b>KPI 1</b>	<b>Consistently communicate with advisory board</b>	
Task	Draft message that communicates all important information from the past two weeks concisely	Biweekly
Milestone	Send biweekly emails about progress made	Biweekly
Milestone	Accept feedback on biweekly progress	Biweekly
<b>KPI 2</b>	<b>Demonstrate product prototype to advisory board</b>	
Task	Set up meeting to show Advisory Board the Prototype	3/24/2022
Milestone	Provide each member with product prototype and allow them to test it out	3/31/2022
Task	Iterate on project based on Advisory Board feedback	4/14/2022
<b>Goal</b>	<b>Prepare Pitch for Innovation Expo</b>	<b>Due Date</b>
<b>KPI 1</b>	<b>Deliver pitch at Innovation Expo</b>	
Task	Identify and articulate most important aspects of project to communicate (development process, business process, demonstrate MVP, etc)	4/7/2022
Task	Design poster with all relevant information	4/14/2022
Milestone	Practice presenting pitch to clients and advisors	4/21/2022