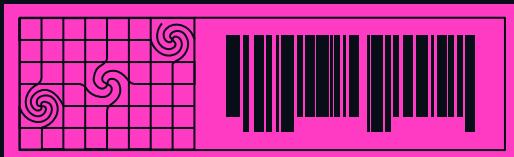




AI-Capella

CS 147 2025au - Assignment 4





OUR TEAM



Vaishnav G.



Bryant M.



Max R.



Marcus L.





Why AI-Capella?

1. User base

- our **target audience** is A-Capella singers

3. A play on words...

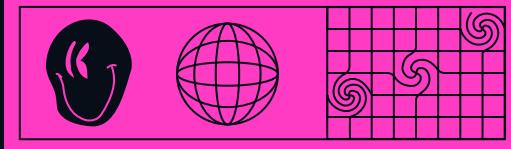
- **AI-Capella** -> Voice AI for ACapella artists



2. Live voice-AI

- We are using Voice AI to give **live feedback/affirmation**

~One-liner: “*Live AI feedback to up your A-Capella singing confidence daily!*”~



The Problem

A-Capella singers struggle to manage of memorization, harmonization, pitch-matching, and rhythm. To make matters worse, in-person voice coaching can too infrequent and too harsh to be conducive for improvement.





Our Solution!



Live Coaching

Immediate pitch, timing, and diction fixes as you sing.



Daily Confidence Booster

Intelligent exercises and affirmation to encourage habitual practice



Tailored Progress Reports

Provides and structures detailed progress analytics, catering to user learning style.



Accessibility

Users can train their voice anywhere, anytime with live feedback.





Market Research

Feature	AI-Capella	Vocal Image	Sing Sharp	Vocaly	Singing Carrots
Live, real-time AI feedback	✓ low-latency, adaptive	⌚ basic / not live	⚠ timing/latency complaints	—	—
Analytics depth (pitch, timing, vibrato, vowel/formant)	✓ rich	— minimal	⌚ pitch-only focus	—	⌚ basic pitch/range tools
Progress tracking & weekly deltas	✓ graphs, goals, streaks	— static	⌚ rigid program	⌚ coach notes only	⌚ light history
Coach personas	- No Persona, AI teaches	⌚ few personas	⌚ generic coach	✓ coach-assigned lessons	—
Adaptive difficulty	✓ Uses voice AI to adapt	⌚	⚠ too fast for beginners	⌚ fixed lessons	⌚ DIY; not guided
A-capella tools	✓ S/A/T/B parts, blend meter	—	—	—	—
Practice modules (breathing, ear training)	✓ integrated & adaptive	⌚	✓ strong set	✓ assignable	⌚ basic
Coach↔student workflow	⌚ shareable reports	—	—	✓ coach→student	-



Key Implications

Most apps focus on static feedback and/or preset lessons with no live instruction

Many apps are incredibly passive or critical. They don't cater to the personal and emotional needs of the user.

Many apps are not tailored to individual growth



We want to provide more ***live*** positive feedback to ***avoid discouragement*** and aim for ***growth in the long-term***.





Direct & Indirect Stakeholders

Direct

- **Acapella Singers:**
 - Encourages them to practice and better both their solo and group singing
- **Beginning Singers**
 - Lack the proper resources for real-time positive feedback
- **Vocal teachers:**
 - Influence how well adopted the app by learners, and could use its data for remote student feedback.

Indirect

- **Parents of young singers:**
 - Their children are at risk if data leaks occur
- **Music schools:**
 - Encourage students to join these schools and can expand the user base of the app
- **Music Therapists:**
 - App can help recovering patients and can be built into their recovery





Tarot Cards

THE **BIG BAD WOLF**

◆
What could a bad actor do with your product?

What would predatory and exploitative behavior look like with your product?

What product features are most vulnerable to manipulation?

Who could be targeted with your product?

THE **BFFs**

◆
If two friends use your product, how could it enhance or detract from their relationship?

How does your product change or create new ways for people to interact?

Does your product fill or change a role previously filled by a person?

THE **RADIO STAR**

◆
Who or what disappears if your product is successful?

Who loses their job?

What other products or services are replaced?

What industries, institutions or policies would be affected?





Big Bad Wolf

- **Our Answer:** Bad actors could collect voice data to be able to create/mimic voices for scams that more easily target older audiences and younger audiences
 - **Children and older audiences** could be targeted as they are more easily **scammed** and with this risk it would require good security to protect their data
 - There needs to be a more **personalized system**, and there is a **privacy value** to it
 - There is **risk** to ruin someone's career if they mimic them saying something bad, this would include higher ups, important figures, children, and older audiences
 - Our stakeholders are **at risk groups**, children and older people
 - Addressing the issues:
 - **Stating the risks**, making it clear what could happen, have them sign legally binding contracts



THE BIG BAD WOLF



**What could a
bad actor do with
your product?**

**What would predatory and
exploitative behavior look like
with your product?**

**What product features are most
vulnerable to manipulation?**

**Who could be targeted with
your product?**





Radio Star

- Our Answer: **Intermediate teachers and tutors** would start disappearing/losing their job
 - Maybe **inferior or other tech start-ups** would disappear
 - The **Tension** between making education more **accessible** and easy and **keeping human aspect** to it
 - There is a **risk of harm against teachers** and the stakeholders would be students and lessons
 - To address the problem we will **work directly with teachers** to figure out which parts of the app need a teacher and which parts don't etc



THE RADIO STAR

◆
**Who or what disappears
if your product is
successful?**

Who loses their job?

**What other products or services
are replaced?**

**What industries, institutions or
policies would be affected?**





BFFs

- **Our Answer:** One friend could become **jealous** of the another's progress analytics. **Users shouldn't be judged based on comparative progression.**
 - Value tension: Singers need **feedback on progress to grow** as artists. All the same, they need to know that they are not inferior to another vocalist friend, wherever they are in their journey.
 - A subgroup that is progressing at a below average pace may get **discouraged**. Also could negatively affect a subgroup of teachers that use the app.
 - Yes, the indirect group of **new singers making slower progress** than long-time A-capella singers.
 - Introduce a A1/A2 B1/B2 C1 level-like system that shows **progress at consistent rates** for the singers of that respective level.



THE BFFs

If two friends use your product, how could it enhance or detract from their relationship?

How does your product change or create new ways for people to interact?

Does your product fill or change a role previously filled by a person?





Tasks



SIMPLE

Practice singing a song!



MODERATE

Receive and learn from
live voice-AI feedback!



COMPLEX

Habitually practicing
over time!



Storyboard! — Slide #1

1.  Main character driving to A-Capella practice.
~ Outside - daytime
for lighting.
2.  Plays song on Spotify
~ Zoomed in
3.  Struggles to sing along
~ character is visually nervous.
4.  Cut to walking to practice.
~ Still outside for lighting.
5.  Quick shot (close-up) to character walking in
6.  Greets A-Capella coach.
~ Introduces new character.
~ Piano clearly seen in background to show this is ABOUT MUSIC
7.  A-Capella coach instructs main character to sing the song "Ilona".
~ Zoom focus in on coach.
~ They are Stern.
8.  Main Character is nervous.
~ Zoom in on emotion
~ takes deep breath

Storyboard! — Slide #2

9. Attempts to sing
~ Main character mumbles and voice cracks.

10. A-Capella coach not impressed and disappointed.
~ Zoom into

11. A-Capella Coach introduces AI-Capella!
~ Zoom in
~ Glow effect

12. Main Character starts the app.
~ Wide shot.
~ Little longer for suspense.

13. A-Capella Genie appears!
~ They are dressed up
~ Almost ecstatic
~ Ready to help!

14. A-Capella Genie introduces himself to main character!
~ Very friendly interaction.

15. Main character sings the song again for the Genie.
~ A little less anxious.

16. Genie listens and provides positive feedback and instruction.
~ Amazing! try again but lift your soft palette

TASK 1: Practice a Song w/ AI-Capella

Storyboard! — Slide #3

TASK 2 : Receive & Learn From the live Voice-AI Feedback

17.



Main character sings again with more confidence.
~They listened to the feedback!
~Singing Audibly improves

18.



Main character sings again for A-Capella coach.
~A-Capella coach impressed!
~Main singing with more confidence.

19.



~ Drawn & Written by Max Rodriguez



Storyboard! — Slide #4 (last one...)

TASK 3: Practice Singing Habitually

19.



- Begin practice montage!
~ Singing improving!
~ More excitement
~ Personalized feedback.



- Rapid fire:
~ Habitual practice

20.

FINAL SCENE



- ~ Show main character and A-Capella coach singing together passionately!



Character Description



A Capella Coach:
An over-critical voice coach, whose tough criticism is a bit too intense for our protagonist.



AI-Capella "Genie":
A cheerful, muppet-like guide who offers positive, encouraging feedback, embodying the supportive spirit of the AI-Capella voice assistant.



Main Character:
An anxious a capella singer who gains confidence and skill through habitual practice and positive feedback, showcasing the power of supportive, personalized learning.





Appendix



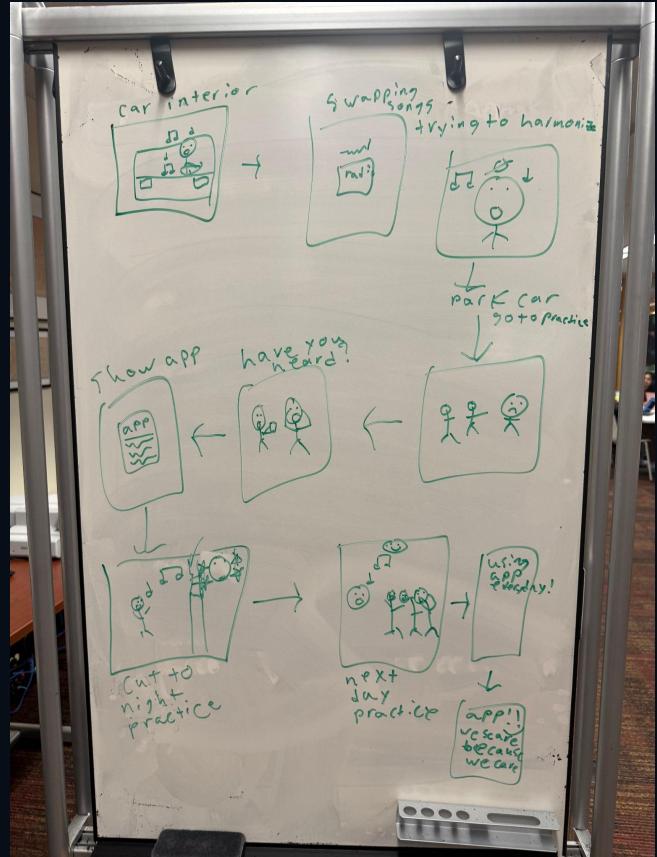


Link

<https://youtu.be/t859vICb7ls>



First Draft Storyboard!



Second Draft Storyboard! (Fullscreen)

~ Drawn & Written by Max Rodriguez

1. Main character driving to A-Capella practice.
~ Outside - daytime for lighting

2. Plays song on Spotify
~ Zoomed in

3. Struggles to sing along
~ character is visually nervous.

4. Cut to walking to practice.
~ Still outside for lighting.

5. Quick shot (close-up) to character walking in

6. Greets A-Capella coach.
~ Introduces new character.
~ Piano clearly seen in background to show this is ABOUT MUSIC

7. A-Capella coach instructs main character to sing the song "Ilona".
~ Zoom focus on coach.
~ They are seen.

8. Main character is nervous.
~ Zoom in on emotion
~ takes deep breath

9. Attempts to sing
~ Main character trembles and voice cracks.

10. A-Capella coach not impressed and disappointed.
~ Zoom into

11. A-Capella Coach introduces AI-Capella!
~ Zoom in
~ Glow effect

12. Main character starts the app.
~ Wide shot.
~ a little longer for suspense.

TASK 1: Practice a Song w/ AI-Capella

13. A-Capella Genie appears!
~ they are dressed up
~ Almost ecstatic
~ Ready to help!

14. A-Capella Genie introduces himself to main character!
~ very friendly interaction.

15. Main character sings the song again for the Genie.
~ A little less anxious.

16. Genie listens and provides positive feedback and instructions.
~ *"You're getting there, keep going with your solo voice!"*

TASK 2: Receive & learn From the live Voice-AI Feedback

17. Main character sings again with more confidence.
~ they listened to the feedback!
~ singing definitely improves

18. Main character sings again for A-Capella coach.
~ A-Capella coach impressed!
~ Main singing with more confidence.

19. Begin practice montage!
~ Singing improving!
~ More excitement
~ Personalized feedback.

20. FINAL SCENE

~ Show main character and A-Capella coach singing together passionately!