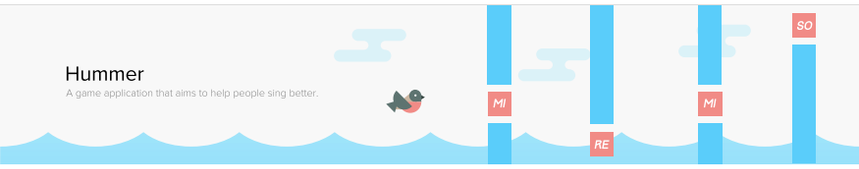
Hummer

A game application that aims to help people sing better.



Background

The idea was derived in 2015 Unique Hack Day, a college hackathon I directed. Afterwards, I joined the team of four graduate students from Stanford University, UC Berkeley, CMU and Columbia University. I worked as the designer to help launch the product for real users. Hummer aims to help amateur singers perform better through playing the game in which players are required to sing to control a humming bird to go through adventurous terrains. Our vision is to create video games for learning skills. We evaluate learner's progress, and adaptively change the game to create a learning curriculum.

Project Details

MY ROLE

UX/UI Designer

PHASE

Minimal Version Product

DURATION

June, 2015 - September, 2015

TEAMMATES

Tianlin Shi, Yinhe Zheng, Larry Xiao, Da Tang

Problem Space

In order to better understand the challenges involved and pinpoint the most crucial user demands, we spent one week on using and anatomizing near 10 popular related products, including Sing! by Smule, Rhythm Master by Tencent, SoundHound, ScoreCloud, Changba, etc. We also interviewed with a group of users who are obsessed with these products. From the analysis on products and the feedbacks from users, we had the insights below:

- **Most of the users started using the products with the initial purpose of enhancing singing skill or musical training.** When asked about why they kept playing with such products, people's answers were basically varied, including playing or singing just for fun, getting to meet other users through the platforms, following those senior singers and so on. Yet, another idea is common among them: hoping to improve their singing skills.
  The products give little systematic feedbacks that are helpful to improve user's singing skill. They are either highly community-based Karaoke such as Sing! or exclusively entertaining games like Rhythm Master. Although they may provide scores after finishing a song according to users' performance, users cannot hone their skills of singing through such simple feedbacks.
  People want experiences that are both entertaining and educational. They need products that are entertaining and meanwhile are capable of providing them with professional and systematic feedbacks through which they could improve singing performance correspondingly.

Solution

In the light of insights above, we brainstormed several feasible ideas for our product. To ensure our methods could be justified in professional way, we have consulted students majoring in Vocal Music from Central Conservatory of Music. Eventually, we came up with the solution below:

Pitch Detection

- We provide users with songs in different levels according to the complexity of pitches. Songs that have relatively narrow ranges of pitches are defined as easy levels, while those having broader ranges of pitches are harder.
- Users need to go through the game levels from easy to hard. In each level, they are required to sing with correct pitches to catch up the standard pitches. To pass each level, they need to reach more than a specific amount of standard pitches.

Sense of Rhythm

- The moment users sing in each pitch should match the rhythm. Singing earlier or later than the standard pitch will lower the scores.
- The difficulty of each level also involves the complexity of rhythms. To pass each level, users need to match more than a specific amount of standard rhythms.

Learning While Playing

- We design a game pattern in which users sing through microphones to control a humming bird to go through the adventurous terrains.
- To successfully navigate through the terrains in the game and gain scores, users need to sing well enough to reach the correct pitches and match the rhythms.

According to the standard above, after users play each song we will show the scores as a whole to them. Besides, feedbacks that contain which parts users need to improve are also available, and they can choose to go back to practice those parts again and again untill they sing good enough to reach the requirements.

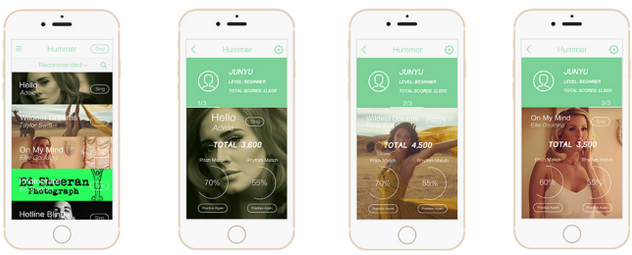
The Design

Pitch Setup

Before getting started, user's pitch would be collected so that our algorithms adapt to user's voice.

Songs in Progress

Users are accessible to three different songs in each level. Songs in next levels are not available untill they pass the songs in the current one. They can also view their performance with the percentage of pitches match and rhythm match. With the feedbacks, users can choose to practice the weak points in each song.



Playing the Game

In the game, players sing to control a humming bird and navigate through adventurous terrains. Pitches of the song are displayed as blocks. Players need to sing well enough so that the bird hits the blocks and gain score.

Our Vision

To us, Hummer is more than a game application. Through this project, we found that with the rapidly advancing technologies people desire simpler tools that can not only bring them intriguing entertainments, but also provide them with educational experiences. We attempt to create video games in which people could master specific skills in an intuitive and simple way.

The minimal version product video

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