

The Music Assistant

Milestone 6 • April 20, 2020

Overview

- No new features
- Extensive documentation
- Code cleanup
- Poster
- E-book page
- Video

A scenic view of the Florida Tech campus. In the foreground, there's a pond with a fountain in the center. To the right, a large, modern building with a white dome and brickwork is visible. The sky is clear and blue. The overall atmosphere is bright and sunny.

Milestone 6 Tasks

Website Documentation

- Used JSDoc
 - Using an extension to document React code
- JS Metrics
 - 94 files
 - 6,200 lines of code
 - 4,500 lines of comments
- CSS Metrics
 - 48 files
 - 1,900 lines of code
 - 300 lines of comments

Server Documentation

- Used JSDoc
- JS Metrics
 - 38 files
 - 8,874 lines of code
 - 1,844 lines of comments

End-User Manual

- We tried to keep the website simple
- No need for an extensive manual

A scenic view of Florida Tech's campus. In the foreground, a calm lake reflects the surrounding environment. On the right, a large, modern building with a prominent white dome and brickwork is visible. The sky is clear and blue. The overall atmosphere is bright and sunny.

User Testing

Background

- Our client is the Director of Choral and String Studies at Florida Tech
- Our website was given to the Florida Tech choir and EFSC choir
- Total Number of Users: ~40

Difficulties

- Our first release was buggy
- Very few users (~2/day)
- COVID-19
- Can't get in touch with our client (see above point)

Results

- Not enough data to show results
- Recent Daily Active Users: ~3
- Cleansing algorithm was not doing enough data smoothing
 - The ML library is very good at picking up all sounds
- Performance analysis algorithm still needs some tweaking

A scenic view of Florida Tech's campus. In the foreground, a calm lake reflects the surrounding buildings and trees. A fountain is visible in the center of the lake. On the right side, a large, modern brick building with a prominent white dome and circular windows is visible. The sky is clear and blue. The overall atmosphere is peaceful and academic.

Lessons Learned

Lessons

- A lot of the software exists, weaving it together is difficult
- Sometimes, people are not as excited about your project as you are.
- Keeping functionality separate from the tools themselves is important.
- Learning new tools and technologies takes time and combining multiple new technologies together at a time is difficult.

Demos

The Music Assistant

Daniel Griessler, Dan Levy, Javier Munoz

Faculty Advisor: Dr. Thomas Eskridge, Dept of Computer Science, Florida Institute of Technology



Summary

The Music Assistant is a tool to aid students practice singing for their choir outside of class times. The Music Assistant also helps teachers by identifying where the students need guidance.

Motivation

- Choir students need to practice their performances outside of class, but it can prove difficult to know whether or not they're improving
- Choir teachers don't necessarily have the time to aid each student individually in the given class times

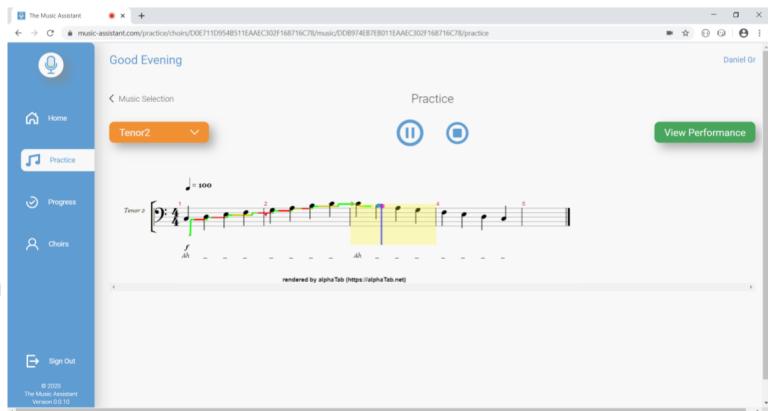
Goals

- Provide real-time feedback to students as they sing along with sheet music
- Suggest exercises to improve the specific student's performance
- Provide teachers with an overview of student proficiencies to aid them in planning lessons

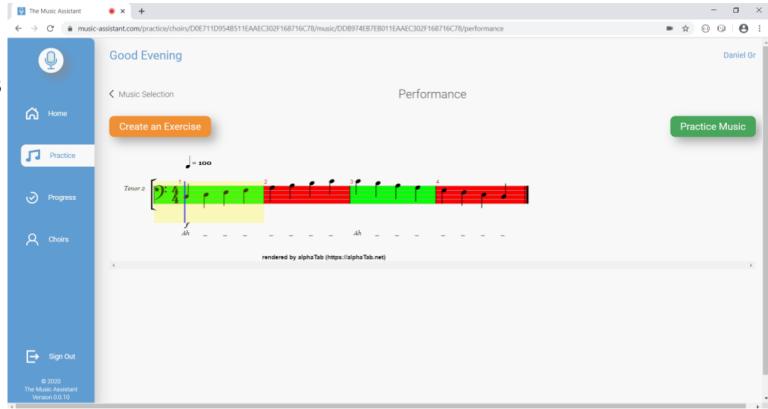
Future Improvements

- Detect similarities in sheet music to better identify problematic patterns for students
- Improve statistic views for teachers (currently in database)
- Import sheet music

Real-Time Feedback



Post-Performance Analysis



NORTHROP GRUMMAN

Engineering & Science
Student Design Showcase
at Florida Institute of Technology



FLORIDA
TECH

E Book and Demo Video

- E Book
 - https://1drv.ms/w/s!AkTVXrUjwu94h7E6bfnczdaI1_ZJIA?e=NmHvsK
- Demo Video
 - <https://1drv.ms/v/s!AkTVXrUjwu94h7FMlifbLyFdvNibmA?e=wQOAz4>



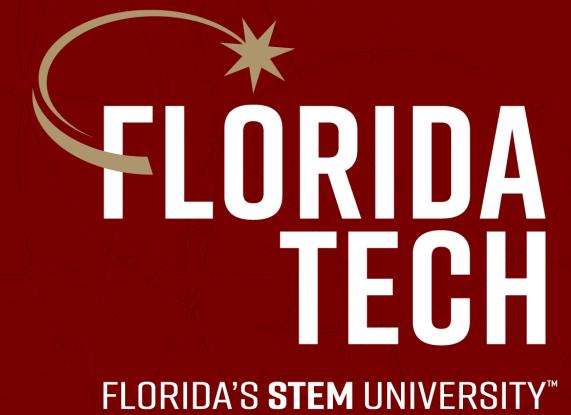
Senior Design 2019/2020

A Special Thank You

- Dr. Thomas Eskridge
 - Associate Professor of Computer Engineering and Sciences at Florida Tech
 - Our faculty sponsor
- Prof. Elizabeth Dopira
 - Director of Choral and String Studies at Florida Tech
 - Our client
- Dr. Robert Lamb
 - Director of Choral Activities at Eastern Florida State College
 - Our “second client”
- Dr. Philip Chan
 - Associate Professor of Computer Engineering and Sciences at Florida Tech
 - Head of CS/SE senior design
- Choir Students
 - Includes ~40 students at Florida Tech and EFSC
 - Testers

A Note to Senior Design Students

- This year's projects have been very impressive
- Best of luck to those who are graduating this semester



Questions?

The Music Assistant • Milestone 6