

To Whom it May Concern:

I am pleased to submit this project proposal for the Summer Computer Science Field Session. I am excited to present my idea for intricate project to tune any pitch, mainly used for vocalist. A software that aims to provide vocalists with a real-time pitch visualization tool akin to a guitar tuner. This software will enable vocalists to enhance their pitch accuracy, improve their overall performance, and develop their vocal skills.

**PROJECT OVERVIEW:**

The goal of this project is to develop an intuitive and user-friendly software application that allows vocalists to visualize their pitch in real time. The software will enable users to monitor their vocal performance, identify pitch deviations, and make necessary adjustments to achieve optimal pitch accuracy.

**KEY FEATURES:**

The proposed software will include the following core features:

a. Real-Time Pitch Visualization: The software will capture and analyze the vocalist's audio input, displaying a real-time visual representation of their pitch accuracy. This visual feedback will assist users in identifying pitch fluctuations and deviations from the desired note.

b. Pitch Accuracy Assessment: The software will provide a quantitative assessment of the vocalist's pitch accuracy, giving them a measurable metric to track their progress over time. This assessment can be displayed through various indicators, such as a numerical score or a graphical representation.

d. Historical Performance Tracking: The software will allow them to review their progress, identify areas for improvement, and track their development over time.

e. User-Friendly Interface: The software will feature an intuitive and visually appealing interface that is easy to navigate. Users will be able to customize the display settings, such as color schemes and visual styles, to suit their preferences.

**TECHNOLOGY:**

To build this software application, we propose utilizing the following technologies:

a. Audio Processing: We will leverage industry-standard audio processing libraries and frameworks to capture and analyze the vocalist's audio input in real time. This will involve techniques such as pitch detection, signal processing, and spectral analysis.

b. Graphical User Interface (GUI): The software's user interface will be developed using modern GUI frameworks, ensuring cross-platform compatibility and a visually engaging experience for users.

c. Data Storage and Management: We will employ efficient data storage and management techniques.

I would appreciate the opportunity to discuss this project further and address any questions or concerns you may have. Thank you for considering this proposal, and I look forward to this summer!

**Sincerely,**

**Delaney Lim**