Detecting the Awesome with GuitarFace

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ABSTRACT

It is difficult to tackle the problem of identifying "awesomeness" without facing serious judgment calls on musical taste. One thing that does give away the joy and energy contained in a moment is the facial expression of a performer. Aiming to recognize the face a guitarist makes when he or she is doing something awesome, we created *GuitarFace*, a Mac application with facial recognition via the OpenCV library. The user is a musician practicing their instrument either alone or across the network with a friend. Gameplay is a mix of MIDI guitar input visualization, counts of musical events like big jumps in pitch or power chords, and events initiated by making a guitar face. In another sense, GuitarFace is the beginnings of a "funny face" detector.

1. INTRODUCTION

2. FACIAL RECOGNITION TECHNIQUES

Using the built in face detector in OpenCV, the rectangular area around the face was detected with high accuracy and only a few lines of code. The strongest feature that we assimilated to "guitar face" was an open mouth. We tried a few different techniques to detect this feature with interesting results and mixed success.

2.1 Color comparison

We assumed that the face was straight on.

2.2 Size comparison

2.3 Machine learning

3. IMPLEMENTATION

3.1 Features

4. EVALUATION

5. CONCLUSION AND FUTURE WORK

5.1 Figures, Tables and Captions

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