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Guitar Chords Recognition Using Real-Time Video Feed

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Abstract

The musical industry is made up of those who make money via writing songs and other musical compositions, producing and selling recorded music and sheet music, organizing concerts and the groups that support, educate, advocate and feed music creators as well. In this developing world the enhancement of new technological approaches can be led to the new way of thinking. And the musical industry has been developed with these newer technologies. This application based on the guitar chord prediction by using real time video feed.

It is difficult task to recognize the actual guitar chords which are played by guitarist just only by looking of the fretting hand. When it comes to guitar chords recognition, several issues have been arisen. Even though there are many past research have been conduct regarding the guitar chord recognition using audio data, there are very limited number of research have been conducted by using video data. This research is mainly focused on recognizing the guitar chords in real-time video feed data by tracking the fretting hand of the guitarist by only using the web camera.

To solve the gap, the proposed solution provides two modules. One is a dataset creation tool which the users can capture any kinds of guitar chords and the main core chords recognition module. The system can solve the problem between tutor and student in online guitar lessons. This application is very effective during this remote learning and covid-19 period. State-of-the-art Convolutional Neural Networks have been used to create the chord recognition algorithm.

Keywords: Guitar Chords Recognition; Image Processing; Computer Vision; CNN; MediaPipe; Hand Landmarks Tracking; Real-Time Prediction; Video Prediction