AutoChord:Automatic Chord accompaniment for a melody

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Deep Learning Web Scraping Audio Processing Audio Generation

# Abstract

***“Where words fail, music speaks”***

Music is a very powerful means to stimulate the mind. It stirs up a tide of emotions in different people. While all of us enjoy the way we feel while listening to music, we rarely delve deeper into its technicalities.

For all the novices out there, when you listen to songs, you don’t listen to just the vocals do you. There is some music in the background that blends vibrantly with the vocals and gives the song a rich feel. The tune sung by the singer is called the **melody**, and the base of the background music that we hear(removing all the beats and additional effects) comprises **chords**.

People who make music know quite well, with experience and learning, as to which chord goes with which phrase of the melody. However, it’s hard for others to figure out the same since it involves quite a bit of music theory.

To resolve this problem, we have come up with an idea for a project that would generate accompanying chords automatically for a given melody using **deep learning**. We will train a Bidirectional LSTM model on a dataset consisting of various songs along with their accompanying chords. This model would be trained to predict two things-the chord label and the chord function combining which we can eliminate the overuse of the most cliché chord progressions and bring out a variety of unique results.

This dataset would be generated by us by **web scraping** the aforementioned information from an appropriate website. The songs could be ranging over various genres, to instill the diversity in our predictions. Some melodies might go well with different chord progressions and thus we shall try to generate multiple options for a single melody and let the user choose the one he/she likes best.

The frontend would be an app through which the input melody can be given. The result would be the melody given accompanied by the generated chords.