

Abstract

In real world, the problem that related to cluster the data are frequently encountered. Whereas that problems have high dimensional similarity and mostly ambiguous one each other and it is hard to be distinguished, e.g. audio data. In guitar playing, the rhyme of the song are beautifully heard while it plays with certain technique. Tone transition techniques are some of the technique of guitar playing, which has tone shifting in a single thrum while playing the guitar. The tone transitions are slide, hammer-on pull-off, bending, and vibrato.

The purposes for grouping the tone transition of guitar sound and recognizing it, Neural Gas method come for solution in this clustering problem. Neural Gas is one of Artificial Neural Networks method which has inspired from Self-Organizing Map that has input parameters i.e neuron values, iteration values, learning rate initial and final, and also neighbourhood rate initial and final that can be set to gain learning be in the form of cluster model that can group and recognize the guitar tone transition technique.

In this final project, the observation be done with input parameter if Neural Gas method in cluster model establishment depends on 200 training data dan then be tested with 50 testing data. From the parameter combination observation and testing result that be done by 15 times, there has highest testing data mean accuracy at 91,7%. The parameter combination's influence give significant result on cluster establishment dan recognizing the guitar tone transition technique.

Keyword : clustering, slide, hammer-on, pull-off, bending, vibrato, self-organizing map, Neural Gas, learning rate, neighbourhood rate.