Abstraction

Knowledge about voice type and range of tones is a thing that must be known by a singer so that when they are singing, they do not appear more or less than their original capabilities. This knowledge is also important to apply in a choir so that they can create a right voice partition with the result that a tone that sounded harmonious unity and don't sound overlap. A mistake determination of tone range and voice type can be fatal for someone's vocal cords if it’s too long not recognized and enforced.

In this final assignment, will be built classification of human voice types system based on the on vocal range area using Artificial Neural Network (ANN) method with Levenberg-Marquardt (LM) as a training algorithm.

This final assigment has been doing research of long frame that affect to MFCC extraction characteristics and other parameters that associated with the ANN-LMA namely epochs, learning rate and hidden layer neurons. Identification of human voice types that done by involve 190 sound data which selected randomly with each totaled 41 Alto, 43 Bass, 69 Sopran and 37 Tenor. The results of this research showed that system can identify human voice types with the best accuracy is 90.5%. Although there is a shortage of women voice type recognition, especially Alto. But, this system can recognize man voice type quite well, especially Bass. The system also do the test about gender identification by involve 190 sound data and can identify gender with the best accuracy is 97.37%.

Keywords: *voice types, gender, vocal range area, artificial neural networks, classification characteristics, Levenberg-Marquardt, training algorithm.*