ABSTRACT

Voice is a form of communication that is commonly used by humans to interact. The character of the voice issued by men is different from that of women. Voice signal processing to classify men-women voices at this time is still in the process of development.

In this final project, a male-female voice classification system based on compressive sensing (CS) will be made using the Orthogonal Matching Pursuit (OMP) reconstruction method. The reconstructed signal is then processed by pitch detection technique using the cepstrum method and classified using K-Nearest Neighbour (KNN). This system will measure and compare the level of accuracy of man-woman voice classification with or without using CS.

The parameters that will be calculated in this study are Signal to Noise Ratio (SNR) and the level of system accuracy. The best accuracy results on the system without using CS is 87.5% with a duration of 10 seconds. While the best system performance in the man-woman voice classification system using CS obtained the best accuracy of 80% with the value of SNR is 17.0478 dB at a compression ratio of 50%.

Keywords: Voice Classification, Compressive sensing, Pitch, Cepstrum, KNN