

ABSTRACT

The guitar is one of the most commonly played musical instruments in the world. From around 1500 BC until now the guitar remains a musical instrument whose role is very important in various genres of music. To produce a variety of sounds then required guitar effects. Guitar effects have become an important component for guitarists who are involved in the music industry or not. In general guitar effects are divided into two types namely the effects of analog guitar and digital guitar effects. Differences in perceptions about the quality of the effects of analog guitar and the effects of digital guitar are unrelenting in his debate.

This final project research compresses the instrumental audio of the guitar by using the effects of digital guitar and analog guitar effects. The results obtained when creating instrumental guitar audio using digital guitar effects and analog guitar effects produce more bits in a file, so the file size will be large. The audio files will take up more disk space and they also require more computing power for the process. Efforts to support efficiency in data storage can be done with different approaches, namely by increasing the efficiency of data compression.

This study uses compressive sensing for compression in guitar instrumental audio with digital guitar effects and analog guitar effects. The results of compressive sensing system design is running well, From the results of audio compression research using MATLAB R2015a software obtained parameter values $MSE = 0.000012$, $SNR = 32.9959$, dan $ODG = -1.00845$. From the result of subjective assessment (MOS) by 49 respondents got best result 4.081 for audio analog with sample rate 44100 Hz and worst result 3.714 for digital audio with sample rate 8000 Hz.

Keywords: Guitar, Guitar Effect, Compressive Sensing, Analog, Digital, Audio Compression