ABSTRACT

Tone extraction of gamelan instrument is performed by analyzing signal on frequency domain. Gamelan are made traditionally, it made every single of instrument is different from the other. This frequency differences become the instrument’s unique characteristic. When frequency of tone known, the instrument that make the tone also can be known. Least mean square (LMS) adaptive filters are digital filter that can adapt filter’s parameter to the input signal using least mean square adaptive algorithm. This feature can be used to detect the frequency of gamelan signal. Detection process began with creating the reference signal. After that, the reference signal will be adapted to the blind signal. If the reference signal can filter the blind signal and produce signal almost zero, the frequency of both signal are same. The tone and the instrument that used to produce blind signal can be known by matching the blind signal’s frequency to the gamelan frequency. This adaptive digital filter system can detect both one-tone signal and two-tone signal with error detection is 1 Hz.

Keywords: Blind Signal, Digital Adaptive Filter, Gamelan, Least Mean Square
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