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KYEONG MIN KIM* (nycrick@gmail.com), 32 Piermont Rd, Cresskill, NJ 07626, and
Richard Kyung (nycrick@gmail.com), 32 Piermont Rd, Cresskill, NJ 07626. *Efficient Noise
Removal Using Low-Pass Filter and Windows.*

In this paper, noise removal process was shown through LPF (Low-Pass Filter) and various windows. Through applying different combinations of LPF and several window types, we were able to execute efficient noise removal. Noise removal cuts out unnecessary frequencies in order to make the sounds smooth and clear, which is necessary for many audio files. The LPF reduces signals that are above the cutoff frequency while allowing the signals that fall below the cutoff. Through executing noise removal with various combinations of filters and windows, we searched for efficient models. The combinations applied include: the LPF alone and the Hanning Window alone, in addition to the combinations of the Hanning Window and LPF, Bartlett Window and LPF, and Blackman Window and LPF. We substantiated the efficiency of the filter and the windows through various comparisons.

For each combination of filters and windows, we began with a time domain graph of noise removal output and pure voice of the same sample. The different combinations yield different results in the amplitude of voice and noise. When LPF and the Hanning Window were applied together, the amplitude of voice increased while the amplitude of noise decreased notably. (Received July 25, 2017)