

Birdsong Denoising Using Wavelets

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Automatic recording of birdsong is becoming the preferred way to monitor and quantify bird populations worldwide. Programmable recorders allow recordings to be obtained at all times of day and year for extended periods of time. Consequently, there is a critical need for robust automated birdsong recognition. One prominent obstacle to achieving this is low signal to noise ratio in unattended recordings. Field recordings are often very noisy: birdsong is only one component in a recording, which also includes noise from the environment (such as wind and rain), other animals (including insects), and human-related activities, as well as noise from the recorder itself. We present a method of denoising using a combination of the wavelet packet decomposition and band-pass or low-pass filtering, and present experiments that demonstrate an order of magnitude improvement in noise reduction over natural noisy bird recordings.