**(Research Article)**
# Effect of sound classification by neural networks in the recognition of human hearing

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**Abstract**

In this paper, we focus on two basic issues: (a) the classification of sound by neural networks based on frequency and sound intensity parameters (b) evaluating the health of different human ears as compared to of those a healthy person. Sound classification by a specific feed forward neural network with two inputs as frequency and sound intensity and two hidden layers is proposed. This process results in categorization of audible and non-audible (dangerous) sounds for a healthy person. In the diagnosis of healthy ear, having the relevant parameters, using the method of machine learning by feed forward neural networks, and simpson and trapezoidal numerical integration rules, the hearing and pain thresholds of the patient's ear are evaluated in comparision with healthy ear. Numerical results and depicted graphs represent the fact that the method presented in this study is able to recognize an individual's ear with mathematical simulation without too much knowledge of medical parameters.

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