

## **An Innovative Auditory Impulsed EEG and Neural Network Based Biometric Identification System**

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**Abstract :** The prevalence of the internet and technology in our day to day lives is creating more security issues than ever. The need for protecting and providing a secure access to private and business data has led to the development of many security systems. One of the potential solutions is to employ the bio-metric authentication technique. In this paper we present an innovative biometric authentication method that utilizes a person's EEG signal, which is acquired in response to an auditory stimulus, and transferred wirelessly to a computer that has the necessary ANN algorithm-Multi layer perceptron neural network because of its ability to differentiate between information which is not linearly separable. In order to determine the weights of the hidden layer we use Gaussian random weight initialization. MLP utilizes a supervised learning technique called Back propagation for training the network. The complex algorithm used for EEG classification reduces the chances of intrusion into the protected public or private data.

**Keywords :** EEG signal, auditory evoked potential, biometrics, multilayer perceptron neural network, back propagation rule, Gaussian random weight initialization

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