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Authors:

Muzaffar Khan, Jaikaran Singh, Mukesh Tiwari

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## **Abstract**

Electromyographic (EMG) signal provide a significant source of information for diagnosis, treatment and management of neuromuscular disorders. This paper is aim at introducing an effective multi-classifier approach to enhance classification accuracy. The proposed system employs both time domain and time-frequency domain features of motor unit action potentials (MUAPs) extracted from an EMG signal. Different classification strategies including single classifier and multiple classifiers with time domain and time frequency domain features were investigated. Support Vector Machine (SVM) and K-nearest neighborhood (KNN) classifier used predict class label ( Myopathic , Neuropathic , or Normal ) for a given MUAP. Extensive analysis was performed on clinical EMG database for the classification of neuromuscular diseases and it is found that the proposed methods provide a very satisfactory performance in terms overall classification accuracy.

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**Index Terms**

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Signal Processing

**Keywords**

Support Vector Machine, EMG; Discrete wavelet Transform; K-nearest neighborhood (KNN)