# Signal Classification Using Deep Neural Networks

*Thursday, June 22, 2023 9:17 AM (1 minute)*

Seismic event source identification using recorded signals could be a complex task to solve using classical mathematical methods. Alternatively, many recent research studies have opted for artificial intelligence techniques to deal with this classification problem. Indeed, artificial neural networks, particularly multilayer perceptron (MLP), are one of the techniques that have achieved good classification result. However, the most critical step in using MLP is feature extraction. The employed features can significantly affect the classifier performance. The advance achievements in graphical processing units have enabled the implementation of deep learning based classifiers which overcome the necessity of feature extraction. Consequently, deep learning approaches could be more objective and efficient as signal features are not specified by the user. In fact, more research studies should be devoted to this field in order to develop more reliable classifiers. The aim of this study is to investigate the performance of a deep neural network on seismic signal classification. To do so, several experiments have been performed on a seismic database of four classes. The obtained results show the ability of this classifier to achieve high accuracy without requiring any subjective signal pre-processing.

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## Promotional text

The aim of this research study is to improve seismic monitoring system algorithms to recognize the different types of the recorded signals. To do so, artificial intelligence techniques, more particularly deep neural networks, are used.

## Oral preference format

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