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Comparing performances of neural network models built through transformed and original data (Conference Paper)

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Abstract

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Data transformation (normalization) is a method used in data preprocessing to scale the range of values in the data within a uniform scale to improve the quality of the data; as a result, the prediction accuracy is improved. However, some scholars have questioned the efficacy of data normalization, arguing that it can destroy the structure in the original (raw) data. To address these arguments, we compared the prediction performances of the two methods in the domain of crude oil prices due to its global significance. It was found that the multilayer perceptron neural network model that was built using normalized data significantly outperformed the multilayer perceptron neural network that was built using raw data. The number of iterations and the computation time for both of the methods were statistically equal as well as for the regression. In view of the arguments in the literature about data standardization, the results of this research could allow researchers in the domain of crude oil price prediction to choose the best opinion. © 2015 IEEE.

Author keywords

Crude oil pric | Data standardization | Multilayer perceptron Neural network | Raw data

Indexed keywords

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Crude oil price prediction

Data standardization

Multi-layer perceptron neural networks

Neural network model

Number of iterations

Prediction accuracy

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Evolutionary Neural Network model for West Texas Intermediate crude oil price prediction

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