Abstract

Stock price movement prediction has been one of the most challenging issues in finance since the time immemorial. Many researchers in past have carried out extensive studies with the intention of investigating the approaches that uncover the hidden information in stock market data. As a result of which, Artificial Intelligence and data mining techniques have come to the forefront because of their ability to map non-linear data. The study encapsulates market indicators with AI techniques to generate useful extracts to improve decisions under conditions of uncertainty. Three approaches (fundamental model, technical indicators model and hybrid model) have been tested using the standalone and integrated machine learning algorithms viz. SVM, ANN, GA-SVM, and GA-ANN and the results of all the three approaches have been compared in the four above mentioned methods. The core objective of this paper is to identify an approach from the above mentioned algorithms that best predicts the Indian stocks price movement. It is observed from the results that the use of GA significantly increases the accuracy of ANN and that the use of technical analysis with SVM and ANN is well suited for Indian stocks and can help investors and traders maximize their quarterly profits.

References


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Index Terms

Computer Science
Artificial Intelligence

Keywords
Support Vector Machine; Artificial Neural Network; Genetic Algorithm; Financial Ratios; Technical Indicators