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Chapter 2 Time Series Forecasting of Stock Market using Hybrid Model of ANN and PSO

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Abstract:

The forecasting of the financial time series has always attracted much interest from investors and researchers. Stock market movements are extremely complex and are influenced by different factors. Hence it is very important to find the most important factors for the stock market. But the high level of noise and complexity of the financial data makes this job very difficult. Many authors already used the comparatively overcome this challenge traditional statistical and machine learning techniques. The dormant high noises data mess up the performance, so to reducing the noise would be competent while constructing the forecasting model. To achieve this task, we employ the hybridization of ANN with PSO in this proposed paper. This paper analyzes a set of seven technical metrics used in common stock market studies, and performs ANN and PSO algorithms. The efficiency of the proposed method is measured by Bombay Stock Exchange (BSE) with 3950 number of daily transactional data from Tata Motors stock price. The total data sets were splits into two parts, three-fourth of the data (3160) were used for building the training dataset and remaining one-fourth (790) for the testing datasets. Empirical prediction analysis shows that the