Using Neural Networks in Technical Analysis for Stock Trend Forecast

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ABSTRACT

In forecasting the trend of stock market, most methods found in technicalanalysis, which take "price" and "volume" as two primary data items, are basedon mathematical medels. Unlike those methods, the paradigm in this paper usingartificial neural networks -- a model-free tool to forecast the stock markettrend. The learning ability of neural networks allowed them to discover thecharacteristics of target systems such as the stock market in Taiwan. In addition, we also study the effect of the learning ability of artificialneural networks when the representations of sample data are different. Weexplore the time domain representation and frequency domain representation fromthe same sample data in this paper. We use Fourier transform to transform timeseries data into frequency series data. The results of this study show that to use artificial neural networks intechnical analysis to forecast stock trend has about the same predictingability compared to other model-based technical methods. As for therepresentation forms of training data, we found that frequency domainrepresentation data does have better performance than the corresponding timedomain in the training of the neural networks.

Keywords : 股市預測 ; 頻譜序列 ; 時間序列 ; 傅立葉變換 ; 倒傳遞學習法 ; 類神經網路

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