遺傳神經網路股票買賣決策系統的實證

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摘要

This study employed "Reinforced Learning" strategy to bypass stock price fluctuation prediction stage and construct stock trading decision system using Genetic Neural Networks (GNN) directly. The system was validated by several important topics aiming at Taiwan stock market. The results showed the following conclusions. (1) In the evolution process of GNN with regard to stock index of Taiwan, two phenomena can be observed. First, the training period performance is correlated with test period performance. Second, the performance increases with each evolution generation of GNN. These two phenomena demonstrated that GNN can learn the general profitable trading strategy on stock index of Taiwan. (2) The trading system using price as well as volume information could increase investment performance if it can avoid over-learning. (3) The profit of the trading system using short period information (4.5 years) is obviously smaller than that using long period information (12 years). It demonstrated that 4.5 years is too short to learn the general profitable trading strategy. (4) Using "majority decision strategy based on multi-GNNs" can not increase the mean but can reduce the standard deviation of profit. It demonstrated that this strategy is useful to improve the stability of investment performance on Taiwan stock market. (5) With regard to sector index, the profit of the trading system is about the same as the buy-and-hold strategy. It demonstrated that the system can not increase the investment performance on the sector index.

關鍵字：stock market, technical index, genetic algorithms, neural networks.