

The applications of genetic algorithms in stock market data mining optimisation

L. Lin, L. Cao, J. Wang & C. Zhang

*Faculty of Information Technology, University of Technology,
Sydney, NSW 2007, Australia*

Capital Market CRC, Sydney NSW 2000, Australia

Abstract

In the stock market, a technical trading rule is a popular tool for analysts and users to carry out their research and decide to buy or sell their shares. The key issue for the success of a trading rule is the selection of values for all parameters and their combinations. However, the range of parameters can vary in a large domain, so it is difficult for users to find the best parameter combination. In this paper, we present the Genetic Algorithm (GA) to overcome the problem in two steps: first, setting a sub-domain of the parameters with GA; second, finding a near optimal value in the sub domain with GA in a very reasonable time.

Keywords: *technical trading rule; genetic algorithm; sub-domain; parameter combination.*

1 Introduction

In stock market and other finance fields, Genetic Algorithm has been applied in many problems [1]. There have been a number of attempts to use GA for acquiring technical trading rules, both for Foreign Exchange Trading [2][3] and for S&P500 market. One application is how to find the best combination values of each parameter. We know that in a trading rule there are many parameters, when we try to find the most profit, we must test the parameter combination one by one, which is called greedy algorithm which costs a lot of running time and memory.

Through analyzing the stock market, we know there are some combinations of the parameters, which can produce a near-max profit and give some

