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Discovering Financial Technical Trading Rules Using Genetic Programming with Lambda Abstraction

Tina Yu, Shu-Heng Chen & Tzu-Wen Kuo

Chapter

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Abstract

We applied genetic programming with a lambda abstraction module mechanism to learn technical trading rules based on S&P 500 index from 1982 to 2002. The results show strong evidence of excess returns over buy-and-hold after transaction cost. The discovered trading rules can be interpreted easily; each rule uses a combination of one to four widely used technical indicators to make trading decisions. The consensus among these trading rules is high. For the majority of the testing period, 80% of the trading rules give the

same decision. These rules also give high transaction frequency. Regardless of the stock market climate, they are able to identify opportunities to make profitable trades and out-perform buy-and-hold.

Keywords

modular genetic programming

lambda abstraction modules

higher-order functions

financial trading rules   buy-and-hold

S&P 500 index

automatically defined functions

PolyGP system   stock market

technical analysis

constrained syntactic structure

strongly typed genetic programming

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