Document of Standard Agent

Team name

U-Mart Project

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Producer(s)

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Agent

Name

RSI Strategy

Summary

The agent buys or sells based on Relative Strength Index (RSI) of futures price. RSI is one of major technical analysisi methods. The limited price is given randomly around the latest futures price, and quantity of the order is given randomly within a prescribed range. Position of the agent is also considered in decision making.

Execution and arguments

according as TestStrategy.java

Summary of arguments

according as TestStrategy.java

Type

Tool	Number of orders	Market of Limit	Asset management	Reference data	Long or short term	Against or follow trend	Learning	Online learning
Strategy.java	1	Limit Price	Yes	futures price, spot price, position, cash, remaining session	Short	Against the trend	No	No

Outline of algorithm

Getting time series of futures price (U-Mart price). The agent calculates RSI of futures prices. RSI= upSum/(upSum+downSum), where upSum means accumulated upward price change and downSum is accumulated downward price change. If RSI become higher than threashold (1.0 - edge band value), the agent makes selling order. The agent buys when RSI is lower than threshold (edge band value). Limited price of the order is decided as Gaussian distribution whose mean value is latest futures price and standard deviation is widthOfPrice. Order volume is obtained as an uniform random numbers between minQuote and maxQuote.

Class

Class Name

RsiStrategy

Super class

Strategy

Summary of class

Same as Summary of Agent

Fields

Name	Type	Role	Range	Value	Reason of Value
widthOfPrice	int	Variance of limit price decided	1 ... 1000	20	
maxQuant	int	Maximam volume of one order	(minQuant+1) ... (initial cash/300,000)	50	
minQuant	int	Minimum volume of one order	1 ... (maxQuant-1)	15	
maxPosition	int	Upper bound of net position. For asset management.	1 ... (initial cash/300,000)	300	
referenceTerm	int	Time window for measuring upward and downward price changes.	4 ... 40	10	empirical rule.
edge	double	Edge band vale of RSI method	0 ... 1	0.3	empirical rule.

Methods

Name	Summary	Returned type	Arguments			
			Name	Type	Role	Range
getOrder	to dicide order	Order	spotPrice	int[]	Time Series of spot price	1 ...
			futurePrice	int[]	Time Series of futures price	-1 : When trade is failure, positive value : contracted futures price
			pos	int	current position	Positive is buying position. Nagative is selling position.
			money	long	amount of cash	0 ...
			restDay	int	Number of to the closing of market	0 ... 240

Attachment

RsiStrategy.doc, RsiStrategy.java

Comments