

Abstract

Stock portfolio is one of form a set of stocks and can be used as an investment strategy to obtain more optimal profit than investing in a single stock without portfolio strategy. Establishment of the optimal portfolio bear with an optimal weights search for each of the stock. Many methods can be used to find the optimal weights, one of the model is created by Markowitz. Combination genetic algorithm is used to find the optimal weights and handling a constraint problem in Markowitz model.

Combination genetic algorithm is almost like general genetic algorithm. The difference are modification for fitness value, first individual initialization, crossover and mutation. In the Markowitz model itself there is a value that determines size of the expected return and the risk of portfolio is α value.

Each portfolio obtained by different initial α values will be compared. The results are the expected optimal weights along with the expected return, return and risk.

Keywords: *Stock Portfolio, Genetic Algorithm, Markowitz Model.*