Abstract

Deposit and savings in the bank has become a conventional instrument. Investors has found a new means of investment which more promising than deposit or savings in the bank. That new mean is investment in stock price, but stock price is moving fluctuatively every day. Because of that we need a system that can give prediction of the stock price to help investors in taking the right action so that the risk can be minimalized.

This final project uses autoregressive for prediction modelling and bat algorithm for the optimation. Autoregressive was introduced by box and jenkins, this method is the most used method for modelling time series data in forecasting. Bat algorithm was introduced by Xin-She Yang. This metaheuristic algorithm was inspired by the echolocation behaviour of a bat. From Xin-She Yang's research, he concludes that bat algorith has a better performance than genetic algorithm and PSO.

By using the dataset from *finance.yahoo.com* , which is four *bluechip* stock price from period 2008-2014, this final project gets a result that shows that bat algorithm can be applied in the stock price prediction with the error rate below 4%, except for the monthly facebook and amazon with ten data inputs. The error rate exceeds 4% but still below 5%.

Keywords: *Stock Price Prediction, Bat Algorithm, Autoregressive, bluechip*