

Abstract

Stock is an interesting investment option because it can generate a big profit. In order for investors to make profits and avoid losses, an attention to their movement is necessary. One of them is to predict the stock.

In this final project, the proposed technique is Hidden Markov Model (HMM) and Fuzzy Logic (FL). HMM has been frequently used to analyze and predict the phenomenon of time series. HMM is used to classify data that has some similarities in data pattern. FL is used to predict stock prices with Gradient Descent to optimize fuzzy rules that formed.

The prediction system uses daily stock data of PT Telekomunikasi Indonesia from January 3rd, 2011 to December 20th, 2014. This system has a MAPE error of 1.21.

Keywords: *time series, stock price, Hidden Markov Model, Fuzzy Logic, Gradient Descent.*