

ABSTRACT

The non-linear nature of the stock market and its fluctuation affect the profit stability of investors. Machine learning methods, such as neural networks, Support Vector Machines (SVM), and Hidden Markov Model (HMM), are promising to control and to identify the uncertainty factors in market prices. In this Paper, HMM is implemented to predict stock prices and market positions. The price prediction procedure is started by generating out-of-sample data as observable data collection to predict the stock prices in a certain period using forward algorithm in HMM problem. Then ten technical indicators are computed to be the observation sequences to predict daily, weekly, and monthly closing prices. Viterbi algorithm is used to predict market state under given technical indicators. The results containing the error evaluation of predicted prices and market states show that the HMM is promising for stock price prediction and its market states.