1098-60-38 **Duy Nguyen*** (d.nguyen@mcla.edu), Department of Mathematics, Massachusetts college of Liberal Arts, 375 Church street, North Adams, MA 01247, and **Qing Zhang** and **George Yin**. *A Stochastic Approximation Approach for Trend-Following Trading.*

This talk develops a feasible computation procedure for trend-following trading under a bull-bear switching market model. In this talk, stock prices are modeled by a regime switching model. The drift of the stock price switches between two parameters corresponding to an uptrend (bull market) and a downtrend (bear market) according to a partially observable Markov chain. The objective is to buy and sell the underlying stock to maximize an expected return. It was shown that an optimal trading strategy can be obtained in terms of two threshold levels. Finding the threshold levels turns out to be a difficult task. In this talk, we develop a stochastic approximation algorithm to approximate the threshold levels. One of the main advantages of this approach is that one need not solve the associated HJB equations. We also establish the convergence of the algorithm and provide numerical examples to illustrate the results.

(Joint work with Q. Zhang and G. Yin) (Received December 23, 2013)