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Nguyet T. Nguyen*, One University Plaza, Youngstown, OH 44555, Department of Mathematics and Statistics, Youngstown State University. *Hidden Markov Models for Financial Market Predictions*.

Hidden Markov Models (HMMs) are typically used to predict hidden regimes of observation data. Therefore they are used in many different areas such as speech recognition systems, computational molecular biology, and financial market predictions.

I use HMMs for both single observation data and multiple observation data to predict regimes of some macro economics variables such as: Inflation (CPI), Economics Growth (GDP), Stock Market Index (S&P500) and Market Volatility (VIX). HMMs' parameters were calibrated and then used to predict economic trends and stock prices. I also avoid overfitting by analyzing relationships between macro economic regimes and stock performances to make stock selections. (Received January 16, 2015)