## 1077-60-2072 Vindya Kumari Pathirana\*, Department of Mathematics and Statistics, University of South Florida, 4202 E. Fowler Ave., Tampa, FL 33620, and Kandethody M Ramachandran, Department of Mathematics and Statistics, University of South Florida, 4202 E. Fowler Ave., Tampa, FL. Forecasting Foreign Exchange rates with Simultaneous Nearest Neighbor Algorithm using Mahalanobis Distance as the Distance Measure. Preliminary report.

Given that exchange rates series exhibit high volatility, it is widely recognized that they are extremely difficult to forecast. Besides, FX data are non-linear and one of the noisiest. Forecasting through non-linear dynamical systems is becoming more and more relevant due to these natures of the data. Nearest Neighbor Algorithms are such most popular non-linear pattern recognition methods that outperform the available linear forecasting methods. Simultaneous nearest neighbor algorithm an extended version of nearest neighbor algorithm that uses a set of simultaneous time series along with real time series. In this paper we suggest to adapt simultaneous nearest neighbor algorithm with Mahalanobis distance to predict highly correlated FX rates. Mahalanobis distance is used due to high correlation between vectors resulting form time series segments. We compare the performance of Mahalanobis distance based algorithm with popular Euclidean and absolute distance based methods. (Received September 21, 2011)