

Abstract: We consider volatility modeling for high-dimensional financial time series by a long short term memory (LSTM) neural network. LSTM is a popular machine learning tool that has been successfully applied in the field of natural language processing. In this talk, we apply a deep LSTM neural network to describe multivariate volatility dynamic behaviours in financial time series. We discuss empirical features of the LSTM modeling for SP500 return series in comparisons with those of popular existing models in terms of volatility forecasting performances.