

Market Index Trend Prediction using Deep Learning and Risk Analysis

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Abstract : Trading in financial markets is subject to risks due to their high volatilities. Here, using an LSTM neural network, and by doing some risk-based feature engineering tasks, we developed a method that can accurately predict trends of the Tehran stock exchange market index from a few days ago. Our test results have shown that the proposed method with an average prediction accuracy of more than 94% is superior to the other common machine learning algorithms. To the best of our knowledge, this is the first work incorporating deep learning and risk factors to accurately predict market trends.

Keywords : deep learning, LSTM, trend prediction, risk management, artificial neural networks

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