

Using Deep Learning Neural Networks and Candlestick Chart Representation to Predict Stock Market

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Abstract : Stock market prediction is still a challenging problem because there are many factors that affect the stock market price such as company news and performance, industry performance, investor sentiment, social media sentiment, and economic factors. This work explores the predictability in the stock market using deep convolutional network and candlestick charts. The outcome is utilized to design a decision support framework that can be used by traders to provide suggested indications of future stock price direction. We perform this work using various types of neural networks like convolutional neural network, residual network and visual geometry group network. From stock market historical data, we converted it to candlestick charts. Finally, these candlestick charts will be feed as input for training a convolutional neural network model. This convolutional neural network model will help us to analyze the patterns inside the candlestick chart and predict the future movements of the stock market. The effectiveness of our method is evaluated in stock market prediction with promising results; 92.2% and 92.1 % accuracy for Taiwan and Indonesian stock market dataset respectively.

Keywords : candlestick chart, deep learning, neural network, stock market prediction

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