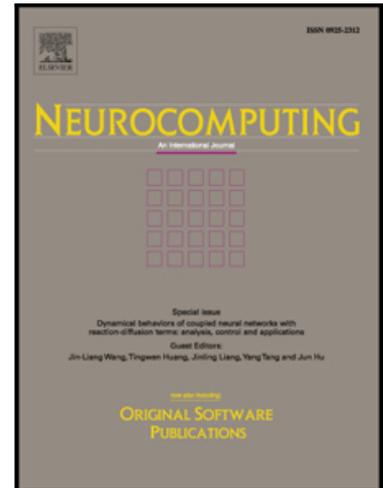


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Combining the Wisdom of Crowds and Technical Analysis for Financial Market Prediction using Deep Random Subspace Ensembles

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Abstract: Many researchers and practitioners have attempted to predict financial market trends for excess returns using multiple information sources including social media. Recent studies have investigated the relation between public sentiment and stock price movements and demonstrated that investment decisions are affected by public opinion. In this paper, we design a novel framework that combines the wisdom of crowds and technical analysis for financial market prediction using a new fusion strategy. A machine learning technique called deep random subspace ensembles (DRSE), which integrates deep learning algorithms and ensemble learning methods, is proposed according to the characteristics of the prediction task. Based on collected real-world datasets, the experimental results show that our proposed method outperforms the baseline models in predicting stock market by at least 14.2% in terms of AUC value, indicating the efficacy of DRSE as a viable mechanism for financial market prediction.

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