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Analysis and Forecasting of Stock price based on a univariate time series approach.

This paper examines how three time series modelling techniques Autoregressive Integrated Moving Average (ARIMA), Artificial Neural Networks (ANN) and a hybrid ARIMA-ANN model will help predict the stock price of Tata Consultancy Services (TCS). To understand the linear dynamics of the stock price series, the ARIMA model is used, and to learn the nonlinear relationships that exist in the data, the ANN model is used. In order to improve the performance of the forecasts, hybrid ARIMA-ANN model is developed that incorporates the advantages of the two approaches. The results of the experiment show that despite the good results of ARIMA in the modeling of linear structures and ANN in the modeling of nonlinear patterns, the hybrid model ARIMA-ANN provides results that are more reliable and valid than the results of both other models. The findings highlight the promise of hybrid models in financial time series prediction and give useful lessons to investors and scholars working in the field of stock market prediction.

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