Forecasting ATM cash demands using a local learning model of cerebellar associative memory network

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238290 Other Building Equipment Contractors
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334112 Computer Storage Device Manufacturing

Resumen: Abstract: Forecasting cash demands at automatic teller machines (ATMs) is challenging, due to the heteroskedastic nature of such time series. Conventional global learning computational intelligence (CI) models, with their generalized learning behaviors, may not capture the complex dynamics and time-varying characteristics of such real-life time series data efficiently. In this paper, we propose to use a novel local learning model of the pseudo self-evolving cerebellar model articulation controller (PSECMAC) associative memory network to produce accurate forecasts of ATM cash demands. As a computational model of the human cerebellum, our model can incorporate local learning to effectively model the complex dynamics of heteroskedastic time series. We evaluated the

forecasting performance of our PSECMAC model against the performances of current established CI and regression models using the NN5 competition dataset of 111 empirical daily ATM cash withdrawal series. The evaluation results show that the forecasting capability of our PSECMAC model exceeds that of the benchmark local and global-learning based models. [Copyright &y& Elsevier]

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