Superensembling of Artificial Neural Network Models for Investigating the Effect of Polar Sea Ice on Indian Summer Monsoon Rainfall

International Journal of Computer Applications
Foundation of Computer Science (FCS), NY, USA

Volume 165
Number 2

Year of Publication: 2017

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10.5120/ijca2017913800

Abstract

Multimodel ensembling is now a popular prediction among researchers of dynamical meteorology. The ensembling of model outputs obtained from more than one initializations reduces the errors in forecasting due to wrong initializations. Multi model ensembling reduces the errors on account of poor understanding of physical phenomenon. Apart from dynamical forecasting, statistical forecasting contributes significantly to the research of this area. It becomes a pertinent question if the ensembling reduces this error in the same light as the dynamical ensembling. To address this question we have considered Artificial Neural Network models which has become a popular statistical model among the researchers of this community. We define the Superensemble model as the model which is a model based on ensembles of many ANN models. The ensemble ANN model is a simple ensemble of more than one ANNs with different initializations. Various approaches to superensembling have been discussed. The superensemble ANN models have been used to study the impact of Antarctic Sea Ice Concentration on the Sea Surface Temperature in an Indian Ocean region. The superensemble forecast is compared with normal and ensemble forecast. The results give a
References


**Index Terms**

Computer Science

Artificial Intelligence

**Keywords**

Super ensemble neural networks, sea ice concentration, correlation, Indian summer monsoon rainfall