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Time Series Prediction Using Neural Networks

Atul Goel, IBS

ABSTRACT

This paper presents a hybrid computation and neural network combination for time series prediction by using SAS® Enterprise Miner™ 5.0. Neural networks are potential candidates for the forecasting domain because of advantages such as nonlinear learning and noise tolerance as compared to conventionally used methods, which estimate only linear data.

However, the search for the ideal network structure is a complex and crucial task. Evolutionary computation, guided by the attractive artifacts for the design of intelligent systems in data mining and control applications (in particular, the multilayer perception), is the most popular neural architecture. In this architecture, neurons are grouped in layers and only forward connections exist, providing a powerful base-learner with nonlinear learning and noise tolerance advantages.

A set of time series, from different domains, was used to evaluate this strategy, comparing it with a heuristic model selection, as well as with conventional forecasting methods.

No paper was submitted for publication.

CONTACT INFORMATION

Atul Goel
IBS
atul2185@gmail.com