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A New Journal for Forecasting Research

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ABSTRACT

The Turkish Journal of Forecasting (TJF) is an open access international journal and it is published semi-annually. The aim of the *TJF* is to procure a platform to integrate the research subjects and fields, and to bridge over the between theory and practice dealing with any aspect of forecasting. The first issue is regular, the second issue is a special issue for International Web Conference on Forecasting. There is no any subscription fee, submission fee or publishing fee. All submitted papers will go through the blind review process, and the Associate Editors assign the manuscripts to at least two reviewers, depending on article type. First two issues of the *TJF* are published in 2017 and a comprehensive summary of the issues are given in this editorial.

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Editorial

The TJF has been established in 2017 with the aim of both sharing and spreading knowledge and creating a common platform for forecasting researchers, working on different disciplines in the field of forecasting. It must be emphasized that there are few international scientific journals which can fully realize that every discipline can find its place in the scientific world just because of having so many different disciplines contributing to the forecasting research and also each of different science field has its own unique approach. In international journals publishing in the field of forecasting, the dominant ideas of researchers who work on specific scientific fields broadly take place. The TJF is established by Giresun University Forecast Research Laboratory that aims to offer an accessible platform for every discipline researchers.

In recent years, the methods based on fuzzy set theory and artificial intelligence such as artificial neural networks, and some computational methods have started to be used frequently in the field of forecasting. However, any of these alternative advanced forecasting methods cannot find the chance to get an acceptance for being published in journals which publish forecasting articles, as they deserve. But international journals publishing the computer science and artificial intelligence research have opened their doors to such studies. The TJF pursues publishing and declaration policies, with the goal of being a platform where alternative forecasting methods can come together.

One of the fundamental aim of the TJF is being a journal indexed in national and international scale over the next 3 years. As well as making progress in this direction, there will not be compromised about quality policy. We proudly state that the TJF is not a commercial journal, but a purely scientific journal. The journal is the most important and precious project of the Giresun University Forecast Research Laboratory.

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Providing a publication platform for the "International Web Conference on Forecasting" conference series organized by Giresun University Forecast Research Laboratory is one of the other aims of the TJF.

Brief information about the studies published in the first two issues of the TJF can be found below.

Voyant et al., from France in "Multi-layer Perceptron and Pruning", to overcome the weaknesses the approaches used on the optimization and learning phases of Multi-Layer Perceptron (MLP), propose to use iteratively the popular damped least-squares method to activate inputs and neurons. In the Levenberg-Marquardt algorithm (LMA) based 2-stage approach, the first phase is applied to 10% of the learning sample to determine weights significantly different from "zero" and delete other. In the second phase, a classical batch process based on LMA is used with the new MLP. 25 measured meteorological time series are used to validate and a cross-comparing is carried out the forecasting results of the classical LMA and the 2-stage LMA.

In "Time Series Prediction with Direct and Recurrent Neural Networks", for forecasting of time series of the Consumer Price Index-CPI, a comparative analysis utilizing recurrent neural network (RNN) is produced by L.M. Lima de Campos from Brazil. Within this context, three models are designed based on recurrent networks and to ensure the incorporation the models ARX (Auto Regressive with external input) and NARX (Nonlinear Auto Regressive with external input), modified "backpropagation" are presented. Moreover, a special case of the Elman Network, re-fed with the hidden layer -ARXI- is introduced as third architecture. For all networks, training is carried out and to select the best architecture of RNNs to forecasting of the CPI.

Khashei et al., from Iran in "An Enhanced Neural-based Bi-Component Hybrid Model for Foreign Exchange Rate Forecasting", for financial time series forecasting, proposes an improved version of hybrid neural based models combining the autoregressive integrated moving average (ARIMA) and artificial neural networks (ANNs). The empirical results revealed in this study indicate that the proposed model can be an effective way to improve forecasting accuracy achieved by traditional hybrid ARIMA/ANNs models in exchange rate forecasting.

Yapar et al. from Turkey in "Why and How Does Exponential Smoothing Fail? An In Depth Comparison of ATA-Simple and Simple Exponential Smoothing" discuss the properties of ATA smoothing method that make it stand out from exponential smoothing models by just comparing the simple versions of both models based on popular error metrics.

Zeybek and Koksoy from Turkey in "A Fuzzy Modelling Approach to Robust Design via Loss Functions", present a fuzzy modelling approach based on expected upside-down normal loss function where the mean and standard deviation responses are fitted by response surface models to identify a set of operating conditions to maximize the degree of satisfaction with respect to the expected loss. Moreover, via the proposed approach, a more informative and realistic approach is provided for comparing competing sets of conditions depending upon how much better or worse a process is. The proposed approach is compared with existing methods by designing an experiment.

Bektas et al. from Turkey in "A Comparison of Support Vector Regression and Multivariable Grey Model for Short-Term Wind Speed Forecasting" aim to reveal the possible usage and compare the performances of support vector regression against a multi-variable grey model in the wind speed forecasting problem. The performances of the selected algorithms are evaluated by a sample dataset obtained from Cukurova region of Turkey. The experimental results show that multi-variable grey model with parameter optimization outperforms support vector regression in terms of forecast accuracy.

A Bayesian learning approach based on Gaussian approximation which estimates the parameters and hyper-parameters in the Bayesian neural networks efficiently is introduced by Kocadagli from Turkey in "Bayesian Learning based Gaussian Approximation for Artificial Neural Networks". The forecasting performance of the proposed approach is compared with the traditional artificial neural networks in the experimental study by using an artificial dataset.

Ozturk et al. from Turkey in "BIST 100 Index Estimation Using Bayesian Regression Modelling" address the portion of the macro factors affecting the stock index such as interest rates, exchange rates, money supply, inflation, gold, oil prices. In the implementation study, the factors influencing the stock index is determined by the method of regression relationship between them, but the Bayesian method is used with regression to predict the data obtained using Central Bank of Turkey (CBT) from the Electronic Data Dissemination System monthly frequencies.

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