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Announcement

Call for papers: Special issue of the *International Journal of Forecasting* on forecasting with artificial neural networks and computational intelligence

1. Motivation and context

The last 20 years of research have produced more than 5000 publications on artificial neural networks (NN) for predictive modelling across various disciplines. However, while NN and other methods of computational intelligence (CI) are firmly established in automatic control and classification problems, they have not received the same level of attention in time series forecasting. Many of the optimistic publications indicating a competitive or even superior performance of NNs have focussed on the theoretical development of novel paradigms, or extensions to existing methods, architectures, and training algorithms, but have lacked a valid and reliable evaluation of the empirical evidence of their performance. Similarly, only a few publications have attempted to develop a thorough methodology on how to model NNs under specific conditions, limiting the modelling process of NNs to a heuristic and ad-hoc 'art' of hand-tuning individual models, rather than a scientific approach following a replicable methodology and modelling process. As a consequence, NNs have not yet been empirically validated as a forecasting method in many areas of forecasting, despite the theoretical advances.

To explore this gap between academic attention, theoretical prowess and empirical performance, we invite contributions to a special issue of the *International Journal of Forecasting* (IJF) dedicated to evaluating the evidence on forecasting with NN and CI methods.

2. Topics

Papers for this special issue should focus on novel techniques, methods, methodologies and applications from the computational intelligence domain, with particular emphasis on neural networks, within all aspects of forecasting. Particular emphasis will be placed on applied or applicable work that provides valid and reliable evidence on the performance of the methods and the development of robust methodologies based upon rigorous evaluation, rather than purely theoretical contributions. Contributions of contenders that have contributed to one of the recent forecasting competitions dedicated to NN and CI methods (ESTSP'07, ESTSP'08, NN3 and NN5) are particularly encouraged. Due to the single-time-origin design of these competitions, the authors are encouraged to obtain the complete datasets and rerun experiments for their papers, in order to obtain representative out-of-sample results across multiple origins and error measures in comparison to established statistical benchmark methods, adhering to the best-practices set out in discussions in the IJF (see e.g. Tashman, 2000 and Adya & Collopy, 1998).

3. Review process

Each submitted paper will be peer-reviewed in the same manner as other submissions to the IJF. Provided

that papers fit into the theme of the special issue, quality and originality of the contribution will be the major criteria for each submission. Due to the tight deadlines, any paper for which the outcome of the refereeing process is “major revision” will not be included in the special issue, but may be revised and resubmitted, according to the journal’s regular process.

4. Important dates

Deadline for manuscripts: 15 September 2008
Preliminary decision to authors: 24 November 2008
Revision due: 12 January 2009
Final manuscript due: 16 March 2009

5. Submission instructions

Authors are encouraged to contact one of the editors to discuss any questions of suitability. Only email submissions will be accepted. Please submit your manuscript via <http://mc.manuscriptcentral.com/ijf>. Manuscripts must be in English and double-spaced throughout. Papers should in general not exceed 6000 words. All submissions will be peer-reviewed.

Detailed instructions for authors are at: <http://www.forecasters.org/ijf>.

6. Guest editors

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References

- Adya, & Collopy (1998). How effective are neural networks at forecasting and prediction? A review and evaluation. *Journal of Forecasting*, 17, 481–495.
- Tashman, L (2000). Out-of-sample tests of forecasting accuracy — an analysis and review. *International Journal of Forecasting*, 16, 437–450.