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International Journal of Forecasting

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Editorial



1. Forecasting – Observing the past and looking towards the future

Forecasting has been of interest to human kind since the beginning of times, always being a multi-faceted discipline – some even say an art. Our approach to forecasting has constantly evolved throughout history. Especially over the last few decades, the advent of applied mathematics, statistics, computer and management sciences has offered new perspectives and opportunities in the science and practice of forecasting. Today at the cross-road of those scientific disciplines is the so-called “data science” where forecasting is a cornerstone. The increased availability of data around us, combined to the will to see digitization as a way to support businesses, increase social welfare, etc., is bringing increased interest in and a new focus to forecasting.

The science of forecasting and its applications still rely on a number of pillars which have been driving most of developments over the last 50 years. There, one may think about economics and finance, meteorology, logistics and supply chain management, among others. However, a wealth of new application areas are emerging, that will further strengthen the need for new developments in forecasting, from both methodological and applied points of view. Examples include

- forecasting for environmental applications like air quality, fires and pollutant dispersion for instance,
- geophysical, weather and climate-related events, e.g. earthquakes, flash floods and heat waves
- energy-related applications to support the transition to weather-driven renewable energy systems,
- new societal aspects related to health, demographics, politics
- urban applications like crime forecasting, road congestion and real estate value prediction,
- recommender systems and online marketing,
- etc.

In addition to these recently emerging application areas, certain methodological areas have gained momentum as driven by the needs in decision-making, man-

agement science, and broad audience applications. For example, very few would invest in probabilistic forecasting and see it as of interest two decades ago. In contrast, today, there is increased consensus that forecasts should be seen and conceived in a probabilistic framework, even if, eventually, single-value predictions may be extracted from probabilistic forecasts (depending on the decision problem of forecast users). Other examples relate to high-dimensional modelling and forecasting, possibly with some structure e.g. hierarchical or spatio-temporal, which are motivated by the ever-increasing number of data streams becoming available and the wish for forecasts with various granularity. In addition, the connection between forecasting and decision-making is also becoming stronger from a methodological point of view, with interesting problems related to the optimal use of forecast in decision processes, the definition of novel forecasting products, better appraising the connection between forecast quality and value, as well as accounting for self-negating impact of forecasts that impact outcomes.

Besides those methodological aspects, the business models related to forecasting are also evolving, as driven by privacy concerns potentially limiting data sharing, opportunities provided by distributed learning, as well as recent proposals for data markets. And, the democratization of forecasting science and practice is clearly noticeable, thanks to the wider availability of data and the more common use of data- and modelling-friendly programming languages like R, Python and Julia. Today, many share data and code on various repositories, forecasting hackatons are regularly organized at universities and in companies, and forecast competitions on various platforms have never been so popular.

Despite all those exciting developments, which will bring interesting problems and datasets to work with, some of the fundamentals in forecasting appear to remain, often blending quantitative approaches and models with expert judgement, being driven by application and decision processes, and with the need for rigorous and well-thought forecast verification.

2. The role of the International Journal of Forecasting in the science and practice of forecasting

Since it was established in 1985, the International Journal of Forecasting has taken a leading role in the dissemination and discussion of advances in the science and practice of forecasting. By being the official publication of the International Institute of Forecasters (IIF), it has become a central platform for our community, as well as for others with interest in forecasting, to constantly and substantially improve our knowledge base in a scientifically sound manner through peer-assessment. The International Journal of Forecasting is the leading journal in its field by continuously attracting works of the highest quality and with potential high impact, while having a very thorough review process allowing for a critical and constructive feedback on all works submitted to the journal. Those involved with the journal at all levels (authors, reviewers, associate editors and editors), and especially previous editors-in-chief for their leadership, have all contributed to bring the journal to where it is today. I mainly think here of Professor Rob Hyndman (Monash University, Australia) for his tremendous commitment to the journal as editor-in-chief over the last (nearly) 15 years, and of Professor Esther Ruiz (University Carlos III of Madrid, Spain) for her continuous commitment to the journal and her work as interim editor-in-chief over the last year. It is a great pleasure and honour to have been appointed as editor-in-chief after them, and to lead the journal at a time where its impact and reputation are already at the highest level. Over the coming period, I will aim at strengthening the position and visibility of the journal, as well as its connection to various methodological and application areas.

Indeed, forecasting is at the interface between methods and applications. New application areas and datasets inspire new forecasting developments, while we also rely on advances in mathematics, statistical and machine learning, behavioral science and economics among others, to further propose and improve forecasting methods. I would like the journal to reflect that, by covering the whole range of topics relevant to forecasting, from theoretical aspects and blue sky proposals to problem- and dataset-driven application works. To support this vision, my plan will be to organize the journal activities into areas over the coming period, in order to give more visibility and readability to the focus and interest areas of the journal.

In view of these new application areas that were discussed in the above, it is the role of the journal to serve as a catalyst by gathering all traditional and novel application areas in order to yield generic insight of value to our community and beyond. Over the last period, the journal has invited a number of authors to give us an extensive overview of status and challenges in their field, e.g., with electricity price forecasting. I will further liaise with established and promising academics and practitioners from areas of interest to the journal, for them to feed the journal with cutting edge ideas, glimpses of new application areas and methodological developments, etc. Similarly, the journal will continue to support forecast

competitions which have the potential to foster activities and discussion, while making a significant impact. This is obviously the case for the M-competitions, while I will generally welcome any new initiative that goes in that direction.

3. The International Journal of Forecasting in practice

Based on our aim to publish works of high quality and with potential high impact, we invite submission of manuscripts that provide novel and original contributions to forecasting science and applications. The level of methodological innovation, contribution and overall interest for the journal is first assessed by the editors, before the manuscripts are to be passed on to associate editors and then reviewed. Manuscripts are also expected to be written and presented in a way that is up to the required standards for the International Journal of Forecasting, i.e., with a logical organization of the flow of information in the paper, reliance on state-of-the-art concepts and results to strengthen the argument, substantial efforts placed on the quality of the text and the presentation of the article, adequate use of mathematics when relevant, etc. Through the screening and assessment by the editors, the aim is to identify those manuscripts that have potential to be published in the journal, and also those that may not be a good fit. With a rapid feedback to the authors on the non-suitability of their manuscript to the journal, they are given the opportunity to submit elsewhere instead of having to wait for reviews and for an editor decision that would lead to a similar outcome. For an overview of the journal, author guidelines related to manuscript preparation, etc., prospective authors are referred to the journal homepage at <https://ijf.forecasters.org>, as well as the Elsevier page for the journal at <https://www.journals.elsevier.com/international-journal-of-forecasting>.

While strong emphasis is placed on the quality, interest and potential impact of manuscripts submitted, a broad variety of types of papers are welcome by the journal, hence reflecting the multi-disciplinary nature of forecasting. This is also valid in terms of paper length: there is no page limit for the manuscripts (neither minimum nor maximum) and the appropriateness of paper length is assessed based on the importance of its contents. Clearly a majority of the manuscripts cover forecasting developments that are driven by certain applications of societal and industrial relevance. Others may be of more methodological nature, with the aim to tackle some of the fundamental challenges in forecasting science, for instance related to forecast verification, causality, forecast combination, connection between forecast quality and value, etc. In addition, we also welcome manuscripts that reproduce works of others, also putting them into a broader perspective by benchmarking existing ideas in new contexts and with new datasets. Finally, we would like to give more room to articles that aim at introducing datasets of relevance to the development and benchmarking of forecasting models and methods, being or not in the frame of forecast competitions.

One of the core values of the International Journal of Forecasting is that the way papers are handled and

reviewed should not be affected by who the authors are. This is why the journal uses a double-blinded review process, that is, the authors do not know who the reviewers are, while the reviewers do not know who the authors are. Manuscripts should then be prepared accordingly so that the possibility to infer the identity of the authors is minimized. This translate to removing author names and affiliations, acknowledgements and funding information, as well as reference to prior work of the authors (which should be masked, if necessary). Such information may then be added again after acceptance, if relevant. As we also value open access, from now on editors of the journal will be picking some of the manuscripts they deem of extraordinary value and importance to the community, so that they become open access at no charge for the authors and their institutions. I believe this may be a good

way to reach a broader audience, beyond our established forecasting community.

The International Journal of Forecasting has gotten a new editorial management platform, which will be used for handling the manuscript workflow, from submission to production. With this new platform, our aim is to improve that workflow, in order to reduce the time from submission to decision, as well as the time from acceptance to publication. From the 1st of January 2020, any new submission to the journal should be made through <https://www.editorialmanager.com/ijf>.

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