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“Knowledge of truth is always more than theoretical and intellectual. It is the product of activity as well as its cause. Scholarly reflection therefore must grow out of real problems, and not be the mere invention of professional scholars.”

JOHN DEWEY,
UNIVERSITY OF VERMONT

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Spring 2020 note from the editor

This Spring 2020 issue of *Foresight*—number 57 since the journal began in 2005—leads off with Associate Editor **Mike Gilliland**'s discussion of **The M4 Forecasting Competition: Takeaways for the Practitioner**. Mike writes:

The M4 competition (2018) was like its predecessors M (1979), M2 (1983), and M3 (1998); they were designed as research endeavors intended to advance our knowledge of forecasting—and they have succeeded in doing so. But should practitioners care about the M4? Does it reflect any of the complex realities faced by business forecasters? Or was it just a scholarly exercise, of interest only to forecasting academics?

The article provides background history and motivation for the M4, competition results, and important takeaways for business forecasting practitioners. Additionally, we should note that a 2020 special issue of the *International Journal of Forecasting* offers a full perspective on the M4 and **Fotios Petropoulos**, co-editor of that issue, adds a Commentary here that emphasizes several key findings of the M4 and expresses the hope “that more forecasting researchers and practitioners embrace entering future competitions.”

Many of the methods competing in the M4 made use of machine learning (ML) models, further stimulating interest in the application of ML for forecasting but also raising important caveats. *Foresight* Associate Editor **Stephan Kolassa** provides a needed perspective on the potential of ML forecasting models, asking **Will Deep and Machine Learning Solve Our Forecasting Problems?**

A broader reality check on artificial intelligence is presented in the new book *Rebooting AI: Building Artificial Intelligence We Can Trust* by Gary Marcus and Ernest Davis. **Stephan Kolassa** makes a second appearance this issue with his review **Two Cheers for Rebooting AI**, concluding that the book “provides a coherent argument for taking the current AI/ML hype with more than just one grain of salt, and it is definitely worth its price for this alone.”

Nevertheless, considerable experimentation at Amazon Web Services shows the progress made and promise of ML models for improving forecasting performance. Our **Forecaster in the Field** interview features **Tim Januschowski**, Manager of Machine Learning Science at AWS. Tim calls for closer collaboration among the forecasting, ML, and OR communities to build better forecasting models, improving their empirical rigor, scalability, downstream implications, and software frameworks.

Foresight's Fall 2019 issue included Part 1 of a three-part series on the initiative at Target Corporation to develop and implement a demand forecasting system capable of efficiently generating the nearly one billion weekly forecasts required by the company. The article described the overall architecture and design of the system and reveals the trade-offs made among forecast accuracy, costs, and explainability. Now, in Part 2, **Phillip Yelland** and **Zeynep Erkin Baz** recount the challenges encountered, the steps taken to address them, and the lessons learned in the process about project management, team structure, organizational dynamics, and other significant matters. Their advice to others:

Should you embark on a large-scale commercial forecasting project similar to ours, we hope that by matching the problem descriptions to the circumstances of your project, you'll be able to select appropriate suggested solutions and understand the various trade-offs involved.

Wrapping things up, **Ira Sohn**, Editor for Long-Range Forecasting, explains **The Economic/Energy/Environmental Conundrum with Official Projections to 2050** of the international energy outlook:

Barring miraculous technological developments to accelerate the decarbonization of the world's energy system over the next 30 years, political leaders will have to "choose their poison": that is, faster economic growth and higher emissions or lower economic growth and fewer emissions.

Len Tashman, *Foresight* Editor

