ISF 2023: Charlottesville, Virginia USA | June 25-28

Event Schedule

Sat, Jun 24, 2023

9:00 AM

Forecasting Summer School Day 1
9:00 AM - 4:00 PM, Jun 24
140

Sun, Jun 25, 2023

8:00 AM

Registration
8:00 AM - 9:00 AM, Jun 25
Darden Rosunblum entrance

9:00 AM

Forecasting Summer School Day 2
9:00 AM - 4:00 PM, Jun 25
140

Everything you need to know about Exponential Smoothing and more (with examples in R)
9:00 AM - 4:00 PM, Jun 25
130

Workshop

Authors: Ivan Svetunkov;Nikolaos Kourentzes

Exponential smoothing is one of the most popular forecasting approaches used in practice. It is robust, it performed very well in many forecasting competitions and is easy to implement and interpret. While the conventional exponential smoothing works well in many contexts, there have been many improvements over the years to make it a proper statistical model (e.g. ETS) and make it applicable to even wider range of problems. In this workshop, we will cover several topics, related to exponential smoothing, including: 1. Introduction to ETS; 2. Advanced ETS with ARIMA and exogenous variables; 3. Model diagnostics, components selection and combination, forecasting; 4. Application of ETS to a variety of contexts, including high frequency and intermittent data. The workshop will be done as a mixture of lectures and computer tasks in R, so the participants are required to bring their own laptops and install R and the packages “forecast”, “greybox”, “tsutils” and “smooth”. the participants are expected to have basic knowledge of R or at least to do an introductory tutorial, which will be provided by the tutors in advance. The materials of the workshop will be supported by the monograph "Forecasting and Analytics with ADAM" by Ivan Svetunkov and the textbooks "Principles of Business Forecasting" by Ord, Fildes & Kourentzes and "Intermittent Demand Forecasting. Context, Methods and Applications" by Boylan & Syntetos.

Speakers

Ivan Svetunkov
Lancaster Centre for Marketing Analytics and Forecasting

Nikolaos Kourentzes
Skövde AI Lab, University of Skövde

Business Forecasting: Techniques, Application and Best Practices
9:00 AM - 4:00 PM, Jun 25
150

Workshop

Authors: Eric Stellwagen;Sarah Darin

Business Forecasting: Techniques, Application and Best Practices This workshop surveys commonly implemented business forecasting methods, explains how they work conceptually, reveals their strengths and limitations, and offers best practices for applying them in a business environment. Numerous real-life examples from a range of industries will be presented. The workshop will utilize the Forecast Pro software to illustrate how the techniques are applied to corporate data. You will leave the workshop with a working knowledge of quantitative and qualitative forecasting methods, enabling you to improve your forecast process and your forecast accuracy. Workshop Outline: Part I: Introduction to Forecasting A broad overview of business forecasting and its various uses within the organization. Topics include approaches to forecasting, features of data, the role of judgment, and resources for forecasters. Part II: Univariate Forecasting A discussion of the benefits and limitations of using univariate forecasting methods followed by a closer look at exponential smoothing and Box-Jenkins (ARIMA) models. Exponential Smoothing A survey of exponential smoothing techniques with particular emphasis on the Holt-Winters family of models, Croston's intermittent demand model and a model designed to forecast items that exhibit significant volume only at certain times of the year. Topics include the pros and cons of using these models, when they are best used, how they work, identifying model components, parameter optimization and model diagnosis. Box-Jenkins (ARIMA) Models An exploration into the use of ARIMA models for business forecasting. Topics include the advantages/disadvantages of using these models, how and when they should be applied, automatic identification procedures, and model diagnostics. Part III: Multivariate Forecasting A discussion of the benefits and requirements for using multivariate forecasting methods followed by a closer look at event-index models, machine learning approaches, and dynamic regression models. Event-index Models Event-index models extend the functionality of exponential smoothing models by providing adjustments for promotions, stock outs and other events that move around the calendar. This unit addresses how these models work, how and when they should be used, and how to customize their design to best suit your needs. Forecasting with Machine Learning An overview of the basics and benefits of forecasting with machine learning (ML). Topics include the basics of machine learning powered forecasting, when ML is likely to improve your forecasts, and the steps involved in generating ML forecasts. A particular emphasis will be placed on extreme gradient boosted trees, an ML approach that performed well in the M5 forecasting competition. Dynamic Regression A detailed look into the ins and outs of regression forecasting. Topics include when regression models are best applied, how to build a regression model, ordinary least squares, leading indicators, lagged variables, Cochrane-Orcutt models, hypothesis testing and the use of "dummy" variables. Part IV: Post Workshop Video Access In addition to the live workshop, attendees will have two weeks of access to an on-demand video library of the topics that will not be presented live. These include: Components of Data An in-depth look at the different components found in time series data including trends, seasonal patterns, business cycles, trading-day variations, interventions (events) and noise. Discussion includes the forms the components can take, spotting local vs. global components, interpretation of business cycle indicators and the use of decomposition routines. Forecasting Accuracy and Evaluation A detailed look at evaluating the accuracy of forecasting methods. Topics include the distinction between within-sample and out-of-sample errors, a survey of error measurement statistics, a summary of findings from forecasting competitions and an explanation of how to use both real-time tracking reports and simulations as predictors of model performance. Identifying Problems in Your Forecasting Process Approaches for focusing on critical items when forecasting large volumes of data. Topics include evaluating and forecasting SKU data, filtering and ABC (Pareto) classification, outlier detection and correction, exception reporting and measuring accuracy across multiple time series. Multiple-Level Forecasting This session explores hierarchical forecasting techniques. Topics include discussion of the need for forecasting at various levels, product vs. geographical hierarchies, reconciliation strategies, top-down vs. bottom-up approaches, the use of proportional allocation and adjustment for seasonality. New Product Forecasting This session explores various approaches for forecasting new products. Topics include the pros and cons of different methods based on a product's classification, and a review of popular methods including item supersession, forecasting by analogy and the Bass diffusion model. About the Workshop Leaders: Eric Stellwagen is the CEO and co-founder of Business Forecast Systems, Inc., a market-leading firm focused on providing software solutions and education to business forecasters. He is the co-author of the Forecast Pro software product line which is currently in use at more than 12,000 companies worldwide. He consults widely in the area of practical business forecasting and has worked with many leading firms including Coca-Cola, Mondelez, Merck, Nabisco, Owens-Corning and Verizon. With more than 35 years of experience, he is recognized as a leading educator in the field of business forecasting, and has presented seminars and workshops under the aegis's of many groups including the Institute for Professional Education, the American Production and Inventory Control Society (APICS), the University of Wisconsin, the University of Tennessee, the Institute for Business Forecasting, the World Research Group, the International Institute of Research, the Electric Power Research Institute, the International Communications Forecasting Association and the International Institute of Forecasters. He has also served on the board of directors of the International Institute of Forecasters and serves on the Practitioner Advisory Board of Foresight: The International Journal of Applied Forecasting. Sarah Darin has 20 years of experience with statistical consulting, sales forecasting, regression modeling and marketing analytics. Sarah holds a Master's of Science in Statistics from the University of Chicago, where she also served as a Lecturer for two years. She has consulted for clients across a broad range of industries, including Consumer Packaged Goods, Telecommunications, Technology, Retail, Automotive and Finance. Before joining BFS, Sarah was Vice President of Consulting Services at Nielsen where she focused on custom analytic solutions for the CPG and Expanded Vertical practices, teaching customers how to efficiently integrate, manage, model and forecast large-scale datasets. Sarah's ability to understand and explain statistical concepts in the context of real-world, messy data makes her an ideal instructor for this workshop. Sarah received her undergraduate degree in Applied Mathematics from Harvard University.

Speakers

Eric Stellwagen
Forecast Pro

Sarah Darin
Business Forecasting Systems

Forecasting to Meet Demand

9:00 AM - 12:00 PM, Jun 25

160

Workshop

Authors: Stephan Kolassa

Demand is influenced by various drivers, from the "standard" ones treated in every forecasting course and textbook like seasonality, trend etc. to causal factors we can influence, like prices or promotions, to factors we cannot influence, like the weather or a competitors' marketing activities. We will discuss forecasting as one ingredient into other processes, data and data quality (with a particular emphasis on causal drivers), the forecasting process itself and forecast quality measurement. We will conclude with a summary of lessons we have learned (the hard way, partly). We will not dig into specific forecasting models or discuss specific software. Instead, we will focus on the larger picture and work in a model-agnostic way so you can apply what you learn whether your model of choice is ordinary least squares, deep learning or boosting.

Speaker

Stephan Kolassa
Data Science Expert
SAP Switzerland AG

Judgment in forecasting – The Good, the Bad and the Ugly

9:00 AM - 12:00 PM, Jun 25

170

Workshop

Authors: Shari De Baets; Anna Sroginis

Judgment continues to play a strong role in the world of forecasting, even with the everincreasing complexity and capabilities of algorithms within our reach. By means of exercises, case examples and discussions, we will explore the potential benefits and dangers of judgment together. Starting off with a series of exercises, we will test when you can trust your gut feel and when you should not. Using specific case examples, we will investigate the role of judgment taking into account various circumstances (e.g., special events, new product forecasting, scenarios). We will discuss challenging questions in a group on how to tackle behavioral elements associated with judgmental forecasting. Can we prevent people from making damaging adjustments to model forecasts, without discouraging them from adjusting when necessary? What is the motivation behind judgmental adjustments? Do we need human judgment in AI and ML algorithms? Whether you are new to the field or a seasoned forecaster, welcome to our session!

Speakers

Shari De Baets
Associate Professor
Open University of the Netherlands

Anna Sroginis
PhD student
Lancaster University

Deep Learning for Forecasting

9:00 AM - 12:00 PM, Jun 25

50

Workshop

Authors: Tim Januschowski;Kashif Rasul;Lorenzo Stella

In this in-person workshop, our goal is to cover neural forecasting methods from ground up, starting from the very basics of deep learning up to recent forecasting model improvements such as (Salinas et al., 2019). The workshop will be in-person with a mix of theoretical lectures and practical sessions. In the lectures, we will focus on the fundamentals of deep learning such as the various architecture types (e.g., feed-forward, convolutional, recurrent neural networks and transformers), and the most important breakthroughs that established the strength of neural networks. We will then see how deep learning can be applied to forecasting by reviewing several state-of-the-art neural forecasting models (e.g., WaveNet (Van Den Oord et al., 2016), DeepAR (Salinas et al., 2020), NBEATS (Oreshkin et al., 2019) and the sequence-to-sequence model family [7, 10]). Furthermore, we will dive into recent work that combines neural networks with probabilistic models such as deep state space (Rangapuram et al., 2018) and deep factor (Wang et al., 2019) models. Finally, we will introduce GluonTS (Alexandrov et al., 2020), a time series modelling toolkit primarily aimed at forecasting which is available in open source. To complement the lectures, we will offer practical sessions for the workshop participants where we will rely on GluonTS (Alexandrov et al., 2020). Target Audience and Requirements This workshop is appropriate for anyone with a solid programming background and a general interest in neural networks. Prior knowledge in neural networks is recommended but not necessary. Knowledge of forecasting, basic statistical and machine learning knowledge are a prerequisite. For the practical material, python programming knowledge is essential. We will inform the participants of more detailed set-ups closer to the workshop. References Alexander Alexandrov, Konstantinos Benidis, Michael Bohlke-Schneider, Valentin Flunkert, Jan Gasthaus, Tim Januschowski, Danielle C Maddix, Syama Sundar Rangapuram, David Salinas, Jasper Schulz, et al. Gluonts: Probabilistic and neural time series modeling in python. Journal of Machine Learning Research, 21(116):1–6, 2020. Boris N Oreshkin, Dmitri Carpov, Nicolas Chapados, and Yoshua Bengio. N-beats: Neural basis expansion analysis for interpretable time series forecasting. arXiv preprint arXiv:1905.10437, 2019. Syama Sundar Rangapuram, Matthias W Seeger, Jan Gasthaus, Lorenzo Stella, Yuyang Wang, and Tim Januschowski. Deep state space models for time series forecasting. In Advances in Neural Information Processing Systems, pp. 7785–7794, 2018. David Salinas, Michael Bohlke-Schneider, Laurent Callot, Roberto Medico, and Jan Gasthaus. High- dimensional multivariate forecasting with low-rank gaussian copula processes. In Advances in Neural Information Processing Systems 32, 2019. David Salinas, Valentin Flunkert, Jan Gasthaus, and Tim Januschowski. DeepAR: Probabilistic forecasting with autoregressive recurrent networks. International Journal of Forecasting, 36(3):1181–1191, 2020. Aäron Van Den Oord, Sander Dieleman, Heiga Zen, Karen Simonyan, Oriol Vinyals, Alex Graves, Nal Kalchbrenner, Andrew W Senior, and Koray Kavukcuoglu. Wavenet: A generative model for raw audio. SSW, 125, 2016. Yuyang Wang, Alex Smola, Danielle Maddix, Jan Gasthaus, Dean Foster, and Tim Januschowski. Deep factors for forecasting. In International Conference on Machine Learning, pp. 6607–6617, 2019.

Speakers

Tim Januschowski
Zalando SE

Kashif Rasul
Morgan Stanley Research

Lorenzo Stella
Amazon Web Services

1:00 PM

Scenario Analysis and Stability Monitoring of Sequential Data

1:00 PM - 4:00 PM, Jun 25

120

Workshop

Analysts such as econometricians, market researchers, and industrial engineers often study ongoing data generation processes such as weekly unemployment numbers, monthly product-sales, and hourly energy consumption by the heating and cooling systems. Using the historical data they build time series models for such processes, which are then used for a variety of purposes. For example, such models can be used for planning the future sales promotions, for the monitoring and control of heating and cooling units, and for studying the adequacy of bank reserves in future scenarios. Linear state space models (SSMs) provide a very flexible framework for modeling such ongoing processes. In time series modeling the evaluation of model-based forecast at a future scenario is called scoring. For state space models if we save the model specification, the parameter estimates, and the state vector associated with the end of the historical period in a repository (called the score-store), repeated scoring of future scenarios can be done very efficiently. In addition, the state vector in the score-store can be easily updated when new observations arrive in the ongoing observation process. Assuming that a good SSM is built using the historical data, you can use the score-store-based scoring to efficiently perform tasks such as what-if analysis of the future scenarios, monitoring an ongoing observation process for structural breaks, and deciding the future values of control variables in the model to achieve desirable outcomes for the target variables. The goal of this workshop is to explain these topics with easy to follow, concrete, examples. The workshop plan is as follows: • A brief introduction to state space modeling • Illustrations of score-store-based: Ø scenario analysis Ø stability monitoring of an ongoing process Ø control of an ongoing process In the workshop the computations for the illustrative examples are carried out by using PROC CSSM, a SAS VIYA/Econometrics® procedure that is designed for state space modeling of time series data. Prior exposure to SAS is not necessary for understanding the workshop material. Rajesh Selukar, PhD is a Principal Research Statistician Developer at SAS Institute Inc. His research interests are in the modeling of time series and longitudinal data. Over the years he has worked on software development for different aspects of time series analysis. In particular, he is the author of CSSM, SSM, and UCM procedures in SAS/ETS® and SAS/Econometrics®.

Speaker

Rajesh Selukar
Principal Research Statistician Developer
SAS Institute

5:00 PM

IJF Editors Meeting
5:00 PM - 6:00 PM, Jun 25
120

Chair: Pierre Pinson

Registration
5:00 PM - 6:00 PM, Jun 25
Event Lawn, The Forum Hotel

5:30 PM

Forecasting Practitioner Meet-n-Greet
5:30 PM - 6:00 PM, Jun 25
Grove Ballroom III, The Forum Hotel

Chair: Elaine Deschamps

ECF Reception
5:30 PM - 6:00 PM, Jun 25
Grove Ballroom III, The Forum Hotel

Chair: Michal Chojnowski

6:00 PM

Welcome Reception
6:00 PM - 7:30 PM, Jun 25
Event Lawn, The Forum Hotel

Chair: Yael Grushka-Cockayne

Mon, Jun 26, 2023

8:00 AM

Registration

8:00 AM - 4:00 PM, Jun 26

Auditorium

8:20 AM

Welcome!

8:20 AM - 8:30 AM, Jun 26

Auditorium

Speaker

Yael Grushka-Cockayne

Darden School of Business

8:30 AM

Forecasting Global Growth Next Decade

8:30 AM - 9:30 AM, Jun 26

Auditorium

Plenary

Authors: M. Ayhan Kose

Chair:Yael Grushka-Cockayne

Abstract: The implications of technological innovations for future growth prospects have become a subject of debate. Some claim that, in the coming decades, the global economy will enjoy a surge in economic growth driven by improvements in productivity thanks to new technologies. Others caution that future growth could stall, or even decline, because new technologies will likely have a declining marginal impact on productivity and structural challenges associated with aging and sluggish growth of investment will adversely affect prospects. It is difficult, if not impossible, to undertake a credible quantitative analysis of the aggregate impact of new technologies on future growth prospects. However, long-term growth forecasts could provide a small window into this debate. One would expect that these forecasts would improve over time as the use of new technologies, such as machine learning, cloud computing, robotics, and smart phones, spreads. This study examines how long-term growth forecasts have evolved during a period of rapid technological change.

Speaker

M. Ayhan Kose

Chief Economist
World Bank Group

9:40 AM

Simulations for Geopolitical Forecasting and Decision-Making

9:40 AM - 10:40 AM, Jun 26

50

Practitioner Spe…

Authors: Amir Bagherpour

Chair:Jim Hoover

Abstract: As global geopolitics grow more complex, foreign affairs policymakers and analysts need to anticipate and predict conflict and crises more effectively, as well as devise better ways of estimating the impact of decisions and actions. Despite improvements in computing technology and exponential growth in data, much of the world's information remains uncaptured, particularly the type of information and context needed for making decisions. In an ideal world, we prefer better models and more data. However, there are trade-offs. For instance, in the case of the 2020 U.S. Presidential elections, aggregate human judgement vis-a-vis prediction markets outperformed polls and most complex statistical models derived from them. A historical assessment of prediction markets vs polls pertaining to US Presidential elections dating back to the 1800s revealed market prices during the pre-poll era predicted presidential elections at least as well as polls have done following the introductions of the scientific survey (Erikson & Wlezien, 2012). But neither aggregate judgment nor statistical forecasting models have the necessary explanatory power needed for making decisions pertaining to complex geopolitical problems. The application of simulation models allows analysts and policymakers to transparently reveal the data inputs, initial conditions, and assumptions of the formal theory driving the outcomes of the respective model. Through this transparency, simulations are opened to a level of scrutiny typically not experienced by status quo qualitative expert judgment. Once policymakers and analysts realize that scrutiny of a simulation serves as a transparent means to understanding a problem, the pathway to better decision-making in geopolitics will be realized.

Speaker

Amir Bagherpour
Managing Director
Accenture Federal Services

Practitioner 1: Emerging Topics 2

9:40 AM - 10:40 AM, Jun 26

120

Regular Submis…

Chair: William Genovese

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3 Subsessions

● Differences In College Major Premia Between Urban And Non-Urban Environments

9:40 AM - 10:00 AM, Jun 26

120

● What The American Public Thinks About Artificial Intelligence And The Future Of Digital Technology

10:00 AM - 10:20 AM, Jun 26

120

● 3 Dimensional Correlated Predictive Analytics Risk Modeling And Management Platform

10:20 AM - 10:40 AM, Jun 26

120

Judgmental 1: Best Practices with Expert Forecasts

9:40 AM - 10:40 AM, Jun 26

130

Regular Submis…

Chair: Mark Orr

3 Subsessions

The Effect Of Dynamic And Interactive Visualizations On Judgmental Forecasts
9:40 AM - 10:00 AM, Jun 26
130

Long-Term Forecasting Of Seasonal Goods Using De-Biased Expert Judgment: Beyond The Pandemic
10:00 AM - 10:20 AM, Jun 26
130

Utility Of Human Judgment Ensembles During Times Of Pandemic Uncertainty
10:20 AM - 10:40 AM, Jun 26
130

State Space 1: Computation and Implementation

9:40 AM - 10:40 AM, Jun 26
140

Regular Submis…

Chair: Taylor Brown

3 Subsessions

Incorporating Parameters Uncertainty In ETS
9:40 AM - 10:00 AM, Jun 26
140

Cross-Sectional State-Space Forecasting With Partial Pooling
10:00 AM - 10:20 AM, Jun 26
140

Pfr: An R Package For Particle Filtering
10:20 AM - 10:40 AM, Jun 26
140

Probabilistic Forecasting 1: Forecasting Methodology

9:40 AM - 10:40 AM, Jun 26
150

Regular Submis…

Chair: Robert Robison

3 Subsessions

Cross-Temporal Probabilistic Forecast Reconciliation
9:40 AM - 10:00 AM, Jun 26
150

Multivariate Random Forest-Based Hedging Policy For Seaborne Forward Freight Markets Under Correlated Demand And Price
10:00 AM - 10:20 AM, Jun 26
150

Dynamic Harmonic Regression With Simulation For Real-Time Estimate Of Likelihood Of Hitting Sales Target
10:20 AM - 10:40 AM, Jun 26
150

Macro 1: Macroeconomic Modelling and Forecasting in a Rapidly Changing World

9:40 AM - 10:40 AM, Jun 26
160

Invited Sess…

Chair: Jennifer Castle

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3 Subsessions

● Robustifying The Hamilton Filter And The Beveridge-Nelson Decomposition Using Smooth Robust Forecasting Devices
9:40 AM - 10:00 AM, Jun 26
160

● Improving Models And Forecasts After Equilibrium-Mean Shifts
10:00 AM - 10:20 AM, Jun 26
160

● Forecasting Uk Inflation Using Historical Evidence On The Role Of Energy In Productivity And Prices
10:20 AM - 10:40 AM, Jun 26
160

Macro 2: Business Cycle 1

9:40 AM - 10:40 AM, Jun 26
170

Regular Submis…

Chair: Azhar Iqbal

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3 Subsessions

● Comparing Midas And Bayesian Var Models For Gdp Forecasting: Insights From Simulation And Empirical Studies
9:40 AM - 10:00 AM, Jun 26
170

● Tracking Economic Activity With Alternative High-Frequency Data
10:00 AM - 10:20 AM, Jun 26
170

● Predicting Recessions, Depth Of Recessions And Monetary Policy Pivots: A New Approach
10:20 AM - 10:40 AM, Jun 26
170

SWEET 1: Energy Usage and Patterns

9:40 AM - 10:40 AM, Jun 26
240

Regular Submis…

Chair: Ritvana Rrukaj

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3 Subsessions

● Forecasting The Power Demand Of Households Within A Mexican Community.
9:40 AM - 10:00 AM, Jun 26
240

● Mastering the Flow of Time: Building Robust Time-Series Forecasting Pipelines with a Weather Twist
10:00 AM - 10:20 AM, Jun 26
240

● Risk Management in Wholesale Electricity Markets: A Signal Processing Approach
10:20 AM - 10:40 AM, Jun 26
240

Social Good 1: Healthcare

9:40 AM - 10:40 AM, Jun 26
30

Regular Submis…

Chair: Michael Porter

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3 Subsessions

Forecasting Duration Of Hospital Stays In Spain Caused By The Impact Of Increasing Atmospheric Co2 Concentrations Using Gamlss Models
9:40 AM - 10:00 AM, Jun 26
30

Detecting Optimal Cut-Off Points In Medical Studies: Improve Survival Prediction Accuracy By Stratifying Hazard Ratios
10:00 AM - 10:20 AM, Jun 26
30

Forecasting Pediatric Heart Donors
10:20 AM - 10:40 AM, Jun 26
30

Tourism: From Sunrise to Sunset

9:40 AM - 10:40 AM, Jun 26
40

Invited Sess…

Chair: Ulrich Gunter

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4 Subsessions

Multivariate Modeling Of Tourism Expenditure By Applying Vine Copulas. An Application To The Case Of Fribourg - Switzerland
9:40 AM - 9:55 AM, Jun 26
40

Assessing The Competitiveness Of The European Airbnb Sector In Times Of Disruptions
9:55 AM - 10:10 AM, Jun 26
40

Impacts Of Multiple Crises On The British Tourism Market: A Counterfactual Forecasting Perspective
10:10 AM - 10:25 AM, Jun 26
40

Forecasting European Airbnb Occupancy During The Pandemic: The Benefits Of Panel-Data And Markov-Switching Models
10:25 AM - 10:40 AM, Jun 26
40

10:40 AM

Coffee Break

10:40 AM - 11:10 AM, Jun 26
PepsiCo Forum

Coffee Break

11:10 AM

Forecasting for Pricing: Challenges and Progress

11:10 AM - 12:30 PM, Jun 26
50

Practitioner Spe…

Authors: Tim Januschowski

Chair:Stephan Kolassa

Abstract: Demand forecasting in the online fashion industry is particularly amenable to global, datadriven forecasting models because of the industry's set of particular challenges. These include the volume of data, the irregularity, the high amount of turn-over in the catalog and the fixed inventory assumption. While standard deep learning forecasting approaches cater for many of these, the fixed inventory assumption requires a special treatment via controlling the relationship between price and demand closely. This is in particularly relevant because a key downstream forecasting application is the decision how to set discounts optimally. In this talk, I will describe the data and modelling approach for this forecasting problem in detail and present empirical results that highlight the effectiveness of the approach taken by pricing at Zalando, a leading online fashion company in Europe.

Speaker

Tim Januschowski
Zalando SE

Practitioner 2: Forecasting Concept to Production with Machine Learning Systems

11:10 AM - 12:30 PM, Jun 26

120

Invited Sess…

Chair: Jon Farland

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4 Subsessions

● Making Your Models Sticky: How Aes Deploys Forecasting At Scale In A Mercurial World

11:10 AM - 11:30 AM, Jun 26

120

● Right-Sizing A Commodities Price Forecasting Framework Using Automatic Machine Learning

11:30 AM - 11:50 AM, Jun 26

120

● How’s The Weather Tomorrow? An Introduction To Vre Forecasting

11:50 AM - 12:10 PM, Jun 26

120

● Deploying Best-Of-Breed Metalearning And Forecasting Frameworks With H2o's Tidal Pulse.

12:10 PM - 12:30 PM, Jun 26

120

Practices and Processes 1: Innovations in Methodology and Practice

11:10 AM - 12:30 PM, Jun 26

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Regular Submis…

Chair: Oskar Triebe

4 Subsessions

- **Forecast Multivariate Time Series Using Lower Dimensional Components**
  11:10 AM - 11:30 AM, Jun 26
  130
- **Estimation And Forecasting Methods For Integer Autoregressive Processes**
  11:30 AM - 11:50 AM, Jun 26
  130
- **Exploring New Horizons In Human Activity Research: Time Series Features Of Points Of Interest Visitation Patterns**
  11:50 AM - 12:10 PM, Jun 26
  130
- **Strategies For Learning Inherently Interpretable Additive Forecasting Models**
  12:10 PM - 12:30 PM, Jun 26
  130

ML/AI 1: Machine learning for forecasting in economics and finance

11:10 AM - 12:30 PM, Jun 26

140

Invited Sess…

Chair: Artem Prokhorov

4 Subsessions

- **Support Vector Regression: Risk Quadrangle Framework**
  11:10 AM - 11:30 AM, Jun 26
  140
- **New Robust Inference For Predictive Regressions**
  11:30 AM - 11:50 AM, Jun 26
  140
- **Change Point Detection In Time Series Using Mixed Integer Programming**
  11:50 AM - 12:10 PM, Jun 26
  140
- **Bi-Objective Cost-Sensitive Machine Learning: Predicting Stock Return Direction Using Option Prices**
  12:10 PM - 12:30 PM, Jun 26
  140

Time Series Models 1: Global forecasting models

11:10 AM - 12:30 PM, Jun 26

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Invited Sess…

Chair: Evangelos Spiliotis

4 Subsessions

Handling Concept Drift In Global Time Series Forecasting
11:10 AM - 11:30 AM, Jun 26
150

Short-Term Load Forecasting With Global Models: A Comparative Analysis Of Neural Network Architectures
11:30 AM - 11:50 AM, Jun 26
150

Forecasting Large Sets Of Economic Data Using Global Models And Time Series Descriptive Information
11:50 AM - 12:10 PM, Jun 26
150

Pre-Trained Deep Networks Outperform True Models When Predicting Time Series Processes
12:10 PM - 12:30 PM, Jun 26
150

Macro 3: Survey-based macroeconomic expectations

11:10 AM - 12:30 PM, Jun 26
160

Invited Sess…

Chair: James Mitchell

4 Subsessions

When Does Information On Forecast Variance Improve The Performance Of A Combined Forecast?
11:10 AM - 11:30 AM, Jun 26
160

Polarized Expectations, Polarized Consumption
11:30 AM - 11:50 AM, Jun 26
160

Partisan Bias In Professional Macroeconomic Forecasts
11:50 AM - 12:10 PM, Jun 26
160

Practice Makes Perfect: Learning Effects With Survey-Based Point And Density Forecasts Of Inflation
12:10 PM - 12:30 PM, Jun 26
160

Macro 4: Models for Macroeconomic Data

11:10 AM - 12:30 PM, Jun 26
170

Regular Submis…

Chair: Christoph Schult

3 Subsessions

U.S. State Tax Revenue Forecasting Challenges: Incorporating Innovations In Bayesian Vector Autoregression (Bvar) Forecasting
11:10 AM - 11:30 AM, Jun 26
170

Global Inflation Connectedness
11:30 AM - 11:50 AM, Jun 26
170

Advancing Forecast Accuracy Analysis: A Partial Linear Instrumental Variable And Double Machine Learning Approach
11:50 AM - 12:10 PM, Jun 26
170

SWEET 2: BigDEAL Forecasting Challenge 2022: Peak Load Forecasting

11:10 AM - 12:30 PM, Jun 26

240

Invited Sess…

Chair: Tao Hong

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3 Subsessions

Energy Forecasting Competitions: Past, Present, And Future

11:10 AM - 11:30 AM, Jun 26

240

Bigdeal Challenge 2022: An Introduction

11:30 AM - 11:50 AM, Jun 26

240

Using Conditional Invertible Neural Networks To Perform Mid-Term Peak Load Forecasting

11:50 AM - 12:10 PM, Jun 26

240

Finance 1: Stock Market 1

11:10 AM - 12:30 PM, Jun 26

250

Regular Submis…

Chair: Jack Strauss

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4 Subsessions

Daily And Intraday Application Of Various Architectures Of The Lstm Model In Algorithmic Investment Strategies On Bitcoin And The S&P 500 Index

11:10 AM - 11:30 AM, Jun 26

250

Optimism, Pessimism, And Future Stock Returns: Enhancing The Predictive Power Of Short Interest

11:30 AM - 11:50 AM, Jun 26

250

Value At Risk Forecasting For Stock Market: Based On Textual Information And A Hybrid Garch-Lstm-Based Model

11:50 AM - 12:10 PM, Jun 26

250

Unlocking The Black Box Of Sentiment And Cryptocurrency: What, Which, Why, When And How?

12:10 PM - 12:30 PM, Jun 26

250

Supply Chain 1: Inventory Management

11:10 AM - 12:30 PM, Jun 26

40

Regular Submis…

Chair: Sarah Van Der Auweraer

4 Subsessions

What Is The Value Of Congruous Forecasts Across Time?
11:10 AM - 11:30 AM, Jun 26
40

Demand Forecasting And Inventory Management With Leading Indicators
11:30 AM - 11:50 AM, Jun 26
40

Unfulfilled Demand For Promotional Items In Online Retail: Investigating The Connection Between Backroom Inventories And Retail Shelves Using Efficient Forecasting Techniques
11:50 AM - 12:10 PM, Jun 26
40

Inventory Control For Periodic Intermittent Demand
12:10 PM - 12:30 PM, Jun 26
40

12:30 PM

Lunch
12:30 PM - 1:30 PM, Jun 26
Abbott Dining Room

Lunch

1:30 PM

Projecting future food systems under alternative climate and socioeconomic scenarios
1:30 PM - 2:30 PM, Jun 26
Auditorium

Plenary

Authors: Keith Wiebe

Chair:Laurent Ferrara

Abstract: Improvements in technology have vastly increased our ability to produce food in recent decades, and rising incomes have vastly increased our ability to buy food, even from the farthest corners of the world. Nevertheless, those same factors – increased production and demand – have also increased pressure on land, water, atmospheric, and other resources, giving rise to concerns about whether recent historic growth rates are sustainable over the longer term. And critically, solutions to address these concerns – such as improved crop varieties or supply chain technologies or collective behavioral changes – often take many years to bear fruit, meaning that we need to anticipate future challenges and begin developing solutions well in advance. This presentation will explore what we can (and can't) say about the future of food systems under a range of alternative possible scenarios, considering both driving factors like climate change and population dynamics as well as policy and investment options to address their impacts.

Speaker

Keith Wiebe
Senior Research Fellow
International Food Policy Research Institute (IFPRI)

2:30 PM

Coffee Break
2:30 PM - 3:00 PM, Jun 26
PepsiCo Forum

Coffee Break

3:00 PM

The M6 competition: Key findings and lessons learned
3:00 PM - 4:00 PM, Jun 26
50

Practitioner Spe…

Authors: Fotios Petropoulos; Evangelos Spiliotis

Chair:Chris Fry

Abstract: The M6 competition (https://mofc.unic.ac.cy/the-m6-competition/) is the continuation of the five previous ones, organized by Spyros Makridakis with the purpose of advancing the theory and practice of forecasting. The M6 "duathlon" competition focused on financial forecasting, aiming to identify appropriate ways of forecasting asset prices and exploiting such forecasts to maximize returns on investments. After one year of running live, 12 monthly submission points, and more than 200 participating teams, the M6 has concluded and the rich data collected are now being processed to investigate the hypotheses made before its start, extract key findings, and identify good practices. In this session, Spyros Makridakis, Evangelos Spiliotis and Fotios Petropoulos will present the preliminary results of the M6 financial competition and elaborate on the lessons learned. A discussion will then follow to allow attendees to express their views, exchange constructive ideas, and identify additional points that are worth analyzing.

Speakers

Fotios Petropoulos
University of Bath & University of Nicosia

Evangelos Spiliotis
Research Fellow
National Technical University of Athens

Practitioner 3: Towards Unbiased Outcomes: The Application of Behavioral Economics in Demand Planning and Forecasting

3:00 PM - 4:00 PM, Jun 26
120

Invited Sess…

Chair: Jonathon Karelse

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3 Subsessions

Business Decision-Making: How Our Biology Leads Us Astray
3:00 PM - 3:20 PM, Jun 26
120

Mitigating Biases To Improve Forecast Accuracy
3:20 PM - 3:40 PM, Jun 26
120

Your Bias Is Showing: Understanding Cognitive Bias In Practice
3:40 PM - 4:00 PM, Jun 26
120

Practices and Processes 2: Forecasting in tech

3:00 PM - 4:00 PM, Jun 26
130

Invited Sess…

Chair: George Monokroussos

3 Subsessions

● Demand Forecast At Wayfair - An Overview Of Our Pipeline
3:00 PM - 3:20 PM, Jun 26
130

● Forecasting At Thrasio
3:20 PM - 3:40 PM, Jun 26
130

● Customer Demand Forecasting In Retail
3:40 PM - 4:00 PM, Jun 26
130

Time Series Models 2: Machine Learning Methods in Time Series 1
3:00 PM - 4:00 PM, Jun 26
150

Regular Submis…

Chair: Mark Jennings

3 Subsessions

● A Novel Non-Parametric Time Series Structural Model
3:00 PM - 3:20 PM, Jun 26
150

● An Efficient Algorithm For Approximating Arma Model Fitting In Large-Scale Time Series Data
3:20 PM - 3:40 PM, Jun 26
150

● A Similarity-Based Approach To Covariance Forecasting
3:40 PM - 4:00 PM, Jun 26
150

Macro: Methodological Contributions
3:00 PM - 4:00 PM, Jun 26
160

Regular Submis…

Chair: Heiner Mikosch

3 Subsessions

● A Mixed-Frequency Var Model With Closed Form Solution
3:00 PM - 3:20 PM, Jun 26
160

● Carpe Diem: Can Daily Oil Prices Improve Model-Based Forecasts Of The Real Price Of Crude Oil?
3:20 PM - 3:40 PM, Jun 26
160

● An Analysis Of Co2 Emissions In Spain Using Many Macroeconomic Predictors
3:40 PM - 4:00 PM, Jun 26
160

Macro 5: Business Cycle 2
3:00 PM - 4:00 PM, Jun 26
170

Regular Submis…

Chair: Katja Heinisch

3 Subsessions

An uncertainty - resilient multi-variate hybrid wavelet VAR neural forecaster for macroeconomic policy variables
3:00 PM - 3:20 PM, Jun 26
170

Systematizing Macroframework Forecasting: High-Dimensional Conditional Forecasting With Accounting Identities
3:20 PM - 3:40 PM, Jun 26
170

Step By Step - A Quarterly Evaluation Of Eu Commissions' Gdp Forecasts
3:40 PM - 4:00 PM, Jun 26
170

Finance 2: Stock Market 2

3:00 PM - 4:00 PM, Jun 26
250

Regular Submis...

Chair: John Guerard

3 Subsessions

Market Ambiguity Attitude And The Risk-Return Tradeoff
3:00 PM - 3:20 PM, Jun 26
250

Bivariate Long Memories in Stock Returns: An Empirical Investigation of U.S. Lumber Supply Chain Stocks
3:20 PM - 3:40 PM, Jun 26
250

A Brief Re-Examination To Stock Price Forecasting, Tests Of Market Efficiency And Predictable Profitability
3:40 PM - 4:00 PM, Jun 26
250

Social Good 2: National Level Forecasting

3:00 PM - 4:00 PM, Jun 26
30

Regular Submis...

Chair: Imran Arif

3 Subsessions

Key Drivers Of Scenario Planning In Science And Technology Public Scenarios
3:00 PM - 3:20 PM, Jun 26
30

Predicting Food Insecurity In Africa
3:20 PM - 3:40 PM, Jun 26
30

Beyond Numbers: Understanding And Forecasting Financial Aid Requirements Of Countries
3:40 PM - 4:00 PM, Jun 26
30

Combinations 1: Aggregation with Experts' Forecasts

3:00 PM - 4:00 PM, Jun 26
40

Regular Submis...

Chair: Andrey Vasnev

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2 Subsessions

● A Heuristic For Combining Correlated Experts When There Is Little Data
3:00 PM - 3:20 PM, Jun 26
40

● Improving The Wisdom Of A Crowd
3:20 PM - 3:40 PM, Jun 26
40

3:40 PM

Flexible Global Forecast Combinations
3:40 PM - 4:00 PM, Jun 26
40

Authors: Andrey Vasnev;Ryan Thompson;Yilin Qian

Expert forecast combination—the aggregation of individual forecasts from multiple models and/or subject-matter experts—is a proven approach to economic forecasting. To date, research in this area has exclusively concentrated on local combination methods, which handle separate but related forecasting tasks in isolation. Yet, it has been known for over two decades in the machine learning community that global methods, which exploit task-relatedness, can improve on local methods that ignore it. Motivated by the possibility for improvement, this paper introduces a framework for flexible global forecast combinations. Through our framework, we develop global versions of several existing forecast combinations. To evaluate the efficacy of these new global forecast combinations, we conduct extensive comparisons using synthetic and real data. Our real data comparisons, which involve expert forecasts of core economic indicators in the Eurozone, are the first empirical evidence that the accuracy of global combinations of expert forecasts can surpass local combinations.

Speaker

Andrey Vasnev
University of Sydney Business School

4:10 PM

Practitioner 4: Forecasting at SAS Part 1: Overview of Forecasting at SAS
4:10 PM - 5:10 PM, Jun 26
120

Invited Sess…

Chair: Charles Chase

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3 Subsessions

● Sas Energy Forecasting Cloud: Making Forecasts More Accessible
4:10 PM - 4:30 PM, Jun 26
120

● An Overview Of Sas® Visual Forecasting
4:30 PM - 4:50 PM, Jun 26
120

● Advancements In Forecasting Using Machine Learning
4:50 PM - 5:10 PM, Jun 26
120

Hierarchical 1: Probabilistic Forecasts
4:10 PM - 5:10 PM, Jun 26
130

Regular Submis…

Chair: Nikolaos Kourentzes

3 Subsessions

Properties Of The Reconciled Gaussian And Count Distributions
4:10 PM - 4:30 PM, Jun 26
130

Probabilistic Cross Temporal Forecasts
4:30 PM - 4:50 PM, Jun 26
130

Neural Networks And Temporal Hierarchies
4:50 PM - 5:10 PM, Jun 26
130

ML/AI 3: Machine Learning vs. Traditional Models

4:10 PM - 5:10 PM, Jun 26
140

Regular Submis…

Chair: Sven F. Crone

3 Subsessions

Statistical Versus Machine Learning Models For Time Series Forecasting: Characterization, Alerts And Recommendations For Use
4:10 PM - 4:30 PM, Jun 26
140

A Tree-Based Framework For Early And Interpretable Forecasts Of Students' Exam Performance Using Online Activity, Self-Regulation Data, And Behavioral Prompting
4:30 PM - 4:50 PM, Jun 26
140

Deep Neural Networks For Shallow Results? An Empirical Evaluation On The Benefit Of Customising Artificial Neural Network Algorithms In Industry Forecasting
4:50 PM - 5:10 PM, Jun 26
140

Time Series Models 3: Machine Learning Methods in Time Series 2

4:10 PM - 5:10 PM, Jun 26
150

Regular Submis…

Chair: Kevin Chen

3 Subsessions

More Efficient Multiple Time Series Forecasting With Time Series Clustering
4:10 PM - 4:30 PM, Jun 26
150

Ensemble Forecasting By Energy Associated Modified By Renyi's Entropy And Statistical Roughness In The Learning Process
4:30 PM - 4:50 PM, Jun 26
150

Blocked Bootstrap Conformal Prediction For Non-Stationary Time-Series
4:50 PM - 5:10 PM, Jun 26
150

Macro 6: Economic Forecasting, the Pandemic, and Monetary Policy

4:10 PM - 5:10 PM, Jun 26
160

Invited Sess…

Chair: Neil Ericsson

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3 Subsessions

- **Modeling Unemployment And Labor Force Participation By Gender And Race**
  4:10 PM - 4:30 PM, Jun 26
  160
- **Statistical Properties Of Fomc Forecast Distributions: Evidence From Individual Fomc Participants From 2008 To 2017**
  4:30 PM - 4:50 PM, Jun 26
  160
- **Labor Force Participation And Unemployment: Structural Change From The Pandemic?**
  4:50 PM - 5:10 PM, Jun 26
  160

Macro 7: Business Cycles 3

4:10 PM - 5:10 PM, Jun 26
170

Regular Submis…

Chair: Angi Roesch

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3 Subsessions

- **Using The Theory Of Economic Interdependence To Measure And Predict The Regional Development Of The Guangdong-Hong Kong-Macao Greater Bay Area**
  4:10 PM - 4:30 PM, Jun 26
  170
- **Do Economic Leading Indicators Work In China?**
  4:30 PM - 4:50 PM, Jun 26
  170
- **Performance Of Housing Starts Forecasts**
  4:50 PM - 5:10 PM, Jun 26
  170

Finance 3: Market Risk and Volatility 1

4:10 PM - 5:10 PM, Jun 26
250

Regular Submis…

Chair: Michał Woźniak

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3 Subsessions

- **The Systemic Risk Approach Based On Implied And Realized Volatility**
  4:10 PM - 4:30 PM, Jun 26
  250
- **Forecasting Volatility Of Stock Market Indices Using Recurrent Neural Networks: A Sequence-Based Approach**
  4:30 PM - 4:50 PM, Jun 26
  250
- **Light Benchmark - Comprehensive Backtesting Framework For Market Risk Models Comparison**
  4:50 PM - 5:10 PM, Jun 26
  250

Evaluation 1: Challenges in Forecast Evaluation

4:10 PM - 5:10 PM, Jun 26
40

Regular Submis…

Chair: Fotios Petropoulos

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3 Subsessions

● Nested Multiple Seasonalities: Accuracy Vs. Runtime
4:10 PM - 4:30 PM, Jun 26
40

● Survey Expectations And Adjustments For Multiple Testing
4:30 PM - 4:50 PM, Jun 26
40

● Forecasting Performance Versus Computational Cost
4:50 PM - 5:10 PM, Jun 26
40

5:20 PM

IIF Members Meeting
5:20 PM - 6:20 PM, Jun 26
120

IIF Members Meeting

Tue, Jun 27, 2023

8:30 AM

Multivariate Non-Linear Time Series Nowcasting with Spatial Considerations
8:30 AM - 9:30 AM, Jun 27
Auditorium

Plenary

Authors: Kathy Ensor

Chair:George Athanasopoulos

Abstract: Of important consideration are multivariate nonlinear dynamic time series with low to high levels of spatial association. We explore a state-space hierarchical modeling approach, considering both a frequentist and Bayesian perspective. Key questions answered are natural clusterings of the time series, short-term deviations between the series, and shortterm predictions based on the fitted models. The methodology is applied to fifty weekly time series spanning three years, representing wastewater signals for SARS CoV-2. Wastewater signals are compared to the corresponding observed cases. From this paradigm, a predictive model for emergent diseases is posited.

Speaker

Kathy Ensor
Noah G. Harding Professor of Statistics
Rice University

9:40 AM

ML/AI 4: Global vs. Local Models
9:40 AM - 10:40 AM, Jun 27
140

Regular Submis…

Chair: Arnoud Wellens

3 Subsessions

An Actor-Critic Method For Forecasting Collections Of Related Time Series
9:40 AM - 10:00 AM, Jun 27
140

Explaining Which Time Series The Global Forecasting Model Uses To Make Predictions With A Shapley Based Approach
10:00 AM - 10:20 AM, Jun 27
140

Global Learning On Heterogeneous Datasets
10:20 AM - 10:40 AM, Jun 27
140

Macro 8: Exchange Rates
9:40 AM - 10:40 AM, Jun 27
170

Regular Submis…

Chair: Brian Sloboda

3 Subsessions

Mexico: Determinants Of The Real Exchange Rate, 2001.01-2021.12
9:40 AM - 10:00 AM, Jun 27
170

Temporal Aggregation Bias And Forecasts Of Effective Exchange Rates: We Know Less Then We Think!
10:00 AM - 10:20 AM, Jun 27
170

Forecasting Asean Exchange Rate Using Xgboost Methods
10:20 AM - 10:40 AM, Jun 27
170

Demography 1: Mortality Models
9:40 AM - 10:40 AM, Jun 27
30

Regular Submis…

Chair: Anastasios Panagiotelis

3 Subsessions

Forecasting Regional-Level Cause-Specific Mortality For China: An Optimal Immutable Reconciliation Approach
9:40 AM - 10:00 AM, Jun 27
30

Crossovers Between Births Falls And Deaths Spikes During The Covid-19 Pandemic: The Mexican Case
10:00 AM - 10:20 AM, Jun 27
30

Boosting Mortality Models With Age And Spatial Shrinkage.
10:20 AM - 10:40 AM, Jun 27
30

Evaluation 2: Forecast Quality and Accuracy
9:40 AM - 10:40 AM, Jun 27
40

Regular Submis…

Chair: Jim Hoover

3 Subsessions

● Scaling-Aware Rating Of Count Forecasts
9:40 AM - 10:00 AM, Jun 27
40

● Forecasting Accuracy And Inventory Performance: Evidence On Their Relationship From The M5 Competition Data
10:00 AM - 10:20 AM, Jun 27
40

● Does Forecast Accuracy Matter: The Impact Of Accuracy Improvement On Supply Chain Outcomes
10:20 AM - 10:40 AM, Jun 27
40

Practitioners 10: Demand Forecasting at Wayfair
9:40 AM - 10:40 AM, Jun 27
50

Invited Sess…

Chair: George Monokroussos

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3 Subsessions

● Integrating Bottom-Up Machine Learning And Top-Down Statistical Approaches For Hierarchical Forecasting: A Comprehensive Framework
9:40 AM - 10:00 AM, Jun 27
50

● Forecasting Demand Distributions At Wayfair: Our Approach
10:00 AM - 10:20 AM, Jun 27
50

● Adjusting Demand Forecasts For Ongoing Experimental Results
10:20 AM - 10:40 AM, Jun 27
50

10:40 AM

Coffee Break
10:40 AM - 11:10 AM, Jun 27
PepsiCo Forum

Coffee Break

11:10 AM

The Organizational Politics of Forecasting Revisited: Collaborative Budget Forecasting meets COVID-19
11:10 AM - 12:30 PM, Jun 27
50

Practitioner Spe…

Authors: Elaine Deschamps

Chair:Michael Gilliland

Abstract: The Washington State Caseload Forecast Council (CFC) is the agency responsible for producing nonpartisan, transparent, and official forecasts that directly drive the baseline for the state operating budget. We forecast caseloads in areas such as public schools, higher education, health care, the prison system, and public assistance. The CFC utilizes a technical workgroup process by program area, in which we bring together budget and forecast analysts, program experts, and other stakeholders to review model assumptions and utilize domain knowledge towards the goal of a consensus forecast. In state budget forecasting (as elsewhere), the COVID-19 pandemic tested the limits of traditional statistical models and heightened the importance of judgmental input, domain knowledge, and collaboration in the forecasting process. This presentation revisits the “ABCs” of forecasting in organizations -- from an article I wrote in Foresight almost two decades ago -- and finds that these guidelines have more resonance than ever after navigating the forecasting challenges posed by the pandemic

Speaker

Elaine Deschamps
Executive Director
Washington State Caseload Forecast Council

Practitioner 5: Forecasting at SAS Part 2: Research and Development

11:10 AM - 12:30 PM, Jun 27
120

Invited Sess…

Chair: Mahesh Joshi

3 Subsessions

Fast Autotuning Of Recurrent Neural Network Forecasting Models On Parallel And Distributed Architectures

11:10 AM - 11:30 AM, Jun 27
120

Scalable, Cloud-Based Hierarchical Reconciliation Methods

11:30 AM - 11:50 AM, Jun 27
120

Applications Of Forecasting To Healthcare Data

11:50 AM - 12:10 PM, Jun 27
120

Practices and Processes 3: Networks and Marketing

11:10 AM - 12:30 PM, Jun 27
130

Regular Submis…

Chair: Oliver Schaer

3 Subsessions

Forecasting The Market Size Of Industries Using Time Series Of Patents

11:10 AM - 11:30 AM, Jun 27
130

Reconciliation Of Structured Time Series Forecasts With Graphs

11:30 AM - 11:50 AM, Jun 27
130

New Product Life-Cycle Forecasting With Temporal Hierarchies

11:50 AM - 12:10 PM, Jun 27
130

Bayesian 1: Bayesian Models in Forecasting

11:10 AM - 12:30 PM, Jun 27
140

Regular Submis…

Chair: Vincent Labhard

4 Subsessions

- **Applied Bayesian Neural Networks In Credit Risk**
  11:10 AM - 11:30 AM, Jun 27
  140
- **A Large Bayesian Var Of The Colombian Economy: An Application Based On Macro Data Sets Augmented With Google Trends.**
  11:30 AM - 11:50 AM, Jun 27
  140
- **Gradient Boosting Is Bayesian? Lessons From Using A Lightgbm Forecasting Model For Workers Compensation Insurance Ratemaking**
  11:50 AM - 12:10 PM, Jun 27
  140
- **Cross-Country Cross-Technology Digitalisation: A Bayesian Hierarchical Model Perspective**
  12:10 PM - 12:30 PM, Jun 27
  140

Probabilistic Forecasting 2: Probabilistic Forecasting

11:10 AM - 12:30 PM, Jun 27

150

Regular Submis…

Chair: Lanyin Zhang

4 Subsessions

- **Mixture Distributions In Collaborative Probabilistic Forecasting Of Disease Outbreaks**
  11:10 AM - 11:30 AM, Jun 27
  150
- **Weighted Kernel Scores**
  11:30 AM - 11:50 AM, Jun 27
  150
- **Probabilistic Forecasting With Factor Quantile Regression: Application To Electricity Trading**
  11:50 AM - 12:10 PM, Jun 27
  150
- **Moteef: Metrics Based On Optimal Transport For Explaining Epidemic Forecasts**
  12:10 PM - 12:30 PM, Jun 27
  150

Macro 9: Recent Advances in Machine Learning for Forecasting in Macroeconomics and Finance

11:10 AM - 12:30 PM, Jun 27

160

Invited Sess…

Chair: Heiner Mikosch

4 Subsessions

● Sparse Solutions For A Complex World: Determining Optimal Variable Transformations For High-Dimensional Macroeconomic Forecasting
11:10 AM - 11:30 AM, Jun 27
160

● Maximally Machine-Learnable Portfolios
11:30 AM - 11:50 AM, Jun 27
160

● Reservoir Computing For Macroeconomic Forecasting With Mixed Frequency Data
11:50 AM - 12:10 PM, Jun 27
160

● Deep Learning With Non-Linear Factor Models: Adaptability And Avoidance Of Curse Of Dimensionality
12:10 PM - 12:30 PM, Jun 27
160

Macro 10: Inflation Expectations

11:10 AM - 12:30 PM, Jun 27
170

Regular Submis…

Chair: Yasemin Ulu

4 Subsessions

● The Impact Of Supply Chain Disruptions On Business Expectations During The Pandemic
11:10 AM - 11:30 AM, Jun 27
170

● Global Inflation Persistence And Inflation Forecasting During The Covid-19 Pandemic
11:30 AM - 11:50 AM, Jun 27
170

● Inflation Nowcasting In Persistently High Inflation Environments
11:50 AM - 12:10 PM, Jun 27
170

● Performance Of The Michigan Survey Of Consumer Inflation Expectations Under Asymmetric Loss: Comparison Of The Pre-Pandemic And Pandemic Periods
12:10 PM - 12:30 PM, Jun 27
170

Finance 4: Financial Forecasting 2

11:10 AM - 12:30 PM, Jun 27
250

Regular Submis…

Chair: Lenin Arango-Castillo

4 Subsessions

● Climate Risks And State-Level Stock-Market Realized Volatility
11:10 AM - 11:30 AM, Jun 27
250

● Problems With Machine Learning, High-Dimensional Data And Forecasting Stock Returns
11:30 AM - 11:50 AM, Jun 27
250

● Forecasting Expected Shortfall With Multiple Quantiles
11:50 AM - 12:10 PM, Jun 27
250

● Line Components In Trading Volume And Realized Volatility Time Series: Effects On The Estimation Of The Long-Range Dependence Parameter
12:10 PM - 12:30 PM, Jun 27
250

Social Good 3: Panel on Border Migration
11:10 AM - 12:30 PM, Jun 27
30

Invited Sess…

Chair: Justin Schon

1 Subsessions

● Forecasting Migrant Encounters At The Southwest Border: Leveraging Quantitative And Qualitative Insights To Maximize Forecasting Accuracy
11:10 AM - 12:30 PM, Jun 27
30

12:30 PM

Lunch
12:30 PM - 1:30 PM, Jun 27
Abbott Dining Room

Lunch

1:30 PM

On Mathematical Modelling and Optimization for Explainable and Fair Machine Learning
1:30 PM - 2:30 PM, Jun 27
Auditorium

Plenary

Authors: Dolores Romero Morales

Chair:Malvina Marchese

Abstract:Decision Making has been dramatically impacted by Artificial Intelligence and Machine Learning. While state-of-the-art Machine Learning models provide excellent accuracy, they effectively work as black boxes. This lack of transparency, with complex functions expressing the relation between input (features) and the outputs (responses), challenges model validation. Furthermore, black boxes may hide unfair outcomes for risk groups in high stakes decision making such as medical diagnosis, allocation of social benefits, or approvals in parole hearings. In this presentation, we will navigate through some novel mathematical optimization techniques embedded in the construction of Machine Learning models to enhance their explainability and fairness. This includes the ability to provide global, local and counterfactual explanations, as well as model fairness requirements.

Speaker

Dolores Romero Morales
Professor in Operations Research
Copenhagen Business School

2:40 PM

Practical considerations of probabilistic and summary forecasting

2:40 PM - 3:40 PM, Jun 27
50

Practitioner Spe…

Authors: Christopher Bergmeir;Slawek Smyl

Chair:Tim Januschowski

Abstract: The talk will cover some pitfalls of forecasting in practice, and then go into details of applications for probabilistic and the related and less usual summary forecasting. Probabilistic forecasting means providing a full distribution. It can be done in a "statistical way" – assuming and fitting parameters of a distribution, or in the "ML way" by outputting a required number of quantiles. The latter can be embodied as a system that learns to output a number of a priori agreed quantiles or a dynamic one, in which during training, it learns to output any quantile and delivers requested quantiles during serving, but the list of needed quantiles is supplied only during serving. The setup for summary forecasting is to have highfrequency data, but make decisions in low-frequency, and long forecasting horizons, e.g., having hourly or daily data and forecasting a year or two ahead. Difficult long-term forecasting in high-frequency is usually not needed, as customers would aggregate it into some low-frequency periods like months or quarters anyway. So instead, in summary forecasting, we directly forecast the periodic summaries.

Speakers

Christopher Bergmeir
Lecturer in Data Science
Monash University

Slawek Smyl
Distinguished Data Scientist
Walmart

Practitioner 6: Forecasting Research and Products at Google

2:40 PM - 3:40 PM, Jun 27
120

Invited Sess…

Chair: Rajat Sen

3 Subsessions

Bigquery's Arima_plus With External Regressors

2:40 PM - 3:00 PM, Jun 27
120

Boosted Learning On Level Imbalance Data Through Hierarchical Data Augmentation

3:00 PM - 3:20 PM, Jun 27
120

Fast And Accurate Deep Forecasting On Vertex With Probabilistic Loss Functions

3:20 PM - 3:40 PM, Jun 27
120

Judgmental 2: Judge Me Not

2:40 PM - 3:40 PM, Jun 27

130

Invited Sess…

Chair: Konstantia Litsiou

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3 Subsessions

● Combining Econometric And Delphi Forecasts Of Tourism Demand In Time Of A Major Crisis
2:40 PM - 3:00 PM, Jun 27
130

● Judgment And Simple Rules– The Effect Of Information Quality And Decision-Autonomy On Forecasting Performance
3:00 PM - 3:20 PM, Jun 27
130

● Relative Performance Of Scenarios For Forecasting The Success Of Megaprojects
3:20 PM - 3:40 PM, Jun 27
130

ML/AI 5: Forecasting Artificial Intelligence
2:40 PM - 3:40 PM, Jun 27
140

Invited Sess…

Chair: Claudio Antonini

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3 Subsessions

● Transferability Of Neural Forecast Methods
2:40 PM - 3:00 PM, Jun 27
140

● Analysis Of Consumer Preferences For New Electric Vehicle Technologies: Can Future Vehicle Steering System Steer Consumer’s Purchase Intention?
3:00 PM - 3:20 PM, Jun 27
140

● Forecasting The Likelihood Of Ai Dominance And The Governance Of Agi
3:20 PM - 3:40 PM, Jun 27
140

Macro 11: Measuring the global economy
2:40 PM - 3:40 PM, Jun 27
160

Invited Sess…

Chair: Xuguang Simon Sheng

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3 Subsessions

● Capturing International Influences In U.s. Monetary Policy Through A Nlp Approach
2:40 PM - 3:00 PM, Jun 27
160

● Financial Stress And Economic Activity: Evidence From A New Worldwide Index
3:00 PM - 3:20 PM, Jun 27
160

● What's The Role Of Perceived Oil Price Shocks In Inflation Expectations?
3:20 PM - 3:40 PM, Jun 27
160

SWEET 3: Models for Energy

2:40 PM - 3:40 PM, Jun 27

240

Regular Submis…

Chair: Ahmed Aziz Ezzat

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3 Subsessions

● Electricity Consumption Patterns And Price Volatility In Turkey: A Wavelet Analysis

2:40 PM - 3:00 PM, Jun 27

240

● On The Benefits Of Synthetic Data And Transfer Learning For Solar Power Forecasting

3:00 PM - 3:20 PM, Jun 27

240

● Airu-Wrf: A Probabilistic Spatio-Temporal Wind Forecasting Model And Its Application To The U.s. North Atlantic Offshore Wind Energy Areas

3:20 PM - 3:40 PM, Jun 27

240

Finance 5: Probabilistic Forecasting

2:40 PM - 3:40 PM, Jun 27

250

Regular Submis…

Chair: Kajal Lahiri

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3 Subsessions

● Evaluating Density Forecasts Using Kernel Scores In A Risk Management Context

2:40 PM - 3:00 PM, Jun 27

250

● Forecasting Daily Commodity Price Volatility Based On U.s. Macroeconomic Announcement Surprises Using A Midas-Garch Model

3:00 PM - 3:20 PM, Jun 27

250

● Roc And Prc Approaches To Evaluate Recession Forecasts

3:20 PM - 3:40 PM, Jun 27

250

Social Good 4: Novel Forecasting Approaches for Food Bank Operations

2:40 PM - 3:40 PM, Jun 27

30

Invited Sess…

Chair: Lauren Davis

3 Subsessions

Optimizing Food Pantry Stocking Strategies: A Client-Preference Based Approach Using Multidimensional Knapsack Problem
2:40 PM - 3:00 PM, Jun 27
30

Novel Forecasting Approaches For Food Bank Operations
3:00 PM - 3:20 PM, Jun 27
30

Predicting The Food Security Status Of College Students Using Machine Learning
3:20 PM - 3:40 PM, Jun 27
30

Supply Chain 2: Advanced supply chain forecasting in practice
2:40 PM - 3:40 PM, Jun 27
40

Invited Sess…

Chair: Naveen Raja

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3 Subsessions

Forecasting Turnaround Times For Air Cargo Operations
2:40 PM - 3:00 PM, Jun 27
40

Empowering Demand Planners With Explainable Ai For Supply Chain Demand Forecasting
3:00 PM - 3:20 PM, Jun 27
40

Effective Supply Chain Demand Forecasting In Practice
3:20 PM - 3:40 PM, Jun 27
40

3:45 PM

UK Chapter Meeting
3:45 PM - 4:15 PM, Jun 27
150

UK Chapter Meeting

6:00 PM

Gala Event
6:00 PM - 10:00 PM, Jun 27
Wool Factory

Regular Submis…

Chair: Evan Wimpey

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1 Subsessions

Timely Humor: Data And Forecasting Comedy
6:00 PM - 10:00 PM, Jun 27
Wool Factory

Wed, Jun 28, 2023

8:30 AM

Citizen Forecasting: The Optimal Strategy for Election Prediction?
8:30 AM - 9:30 AM, Jun 28
Auditorium

Plenary

Authors: Michael Lewis-Beck

Chair:Pierre Pinson

Abstract: The major scientific approaches to election forecasting are structural models, prediction markets and opinion polling. The last dominates the media and focuses on vote intention poll results, e.g., “If the election were held tomorrow, who would you vote for?” However, a far less well-known strategy—citizen forecasting (CF)—offers more promise. Rather than vote intention, it relies on vote expectation, e.g., “Who do you think will win the upcoming election?” This approach was first tried in the United States (Lewis-Beck and Skalaban, 1989; Lewis-Beck and Tien, 1999)) and has since been pursued in the United Kingdom (Murr, 2016). Recent performance evaluations have shown that in the United Kingdom vote expectations clearly offer more predictive accuracy than vote intentions (Murr, Stegmaier, and Lewis-Beck. 2020). Current citizen forecasting work on Germany (Murr and Lewis-Beck, 2021) and France (Dufresne et al., 2022) has also yielded much. In this essay, we critically evaluate applications and extensions of the CF approach.

Speaker

Michael Lewis-Beck
F. Wendell Miller Distinguished Professor of Political Science
University of Iowa

9:40 AM

Accelerate Demand Forecasting and Planning Insights: The art of the Possible

9:40 AM - 10:40 AM, Jun 28

50

Practitioner Spe…

Authors: Charles Chase

Chair:Michael Gilliland

Abstract: The landscape of supply chains has changed rapidly due to unforeseen disruptions that include the pandemic, inflation, oil price fluctuations and geopolitical activities. The result, supply chains are under immense pressure to keep up with shifting consumer demand patterns. Traditionally, predicting customer demand relied on sales history, trends, and seasonality. But in recent years as sales velocity has increased, most of the typical sales and inventory data around demand signals has been turned on its head, and it’s no longer a clear indicator of what will happen next. To keep up, organizations must adapt demand planning analytics and processes to account for the increased speed of business. These and other related topics will be discussed as to how companies are using IA (Intelligent Automation) supported by machine learning to solve these challenges.

Speaker

Charles Chase
Executive Industry Consultant
SAS Institute Inc.

Practitioner 7: Forecasting at SAS Part 4: Practitioners’ Session Part 2

9:40 AM - 10:40 AM, Jun 28

120

Invited Sess…

Chair: Chip Wells

3 Subsessions

● Building Combined Forecasts With Machine Learning Using Sas Viya And Python
9:40 AM - 10:00 AM, Jun 28
120

● Energy Forecasting For The Future
10:00 AM - 10:20 AM, Jun 28
120

● Developing And Refining Custom Forecast Models
10:20 AM - 10:40 AM, Jun 28
120

Practices and Processes 4: Emerging Topics 1

9:40 AM - 10:40 AM, Jun 28
130

Regular Submis…

Chair: Vasileios Bougioukos

3 Subsessions

● Evolution Of Topics In Time Series Forecasting: Insights From Social Media And Research Articles
9:40 AM - 10:00 AM, Jun 28
130

● Improving The Forecast Accuracy Of Protected Data Using Time Series Features
10:00 AM - 10:20 AM, Jun 28
130

● Beyond Causality: Using Forecasting Analytics For Business, Industrial And Policy Problems
10:20 AM - 10:40 AM, Jun 28
130

ML/AI 6: Anomaly and Fraud Detection

9:40 AM - 10:40 AM, Jun 28
140

Regular Submis…

Chair: Priyanga Dilini Talagala

3 Subsessions

● A Time Series Of Networks. Is Everything Ok? Are There Anomalies?
9:40 AM - 10:00 AM, Jun 28
140

● Forecasting Spoofing Manipulation
10:00 AM - 10:20 AM, Jun 28
140

● Anomaly Detection In Image Time Series (Its) Using Explainable Ai (Xai)
10:20 AM - 10:40 AM, Jun 28
140

Time Series Models 4: Methodological Contributions in Time Series Modeling

9:40 AM - 10:40 AM, Jun 28
150

Regular Submis…

Chair: Benedikt Sonnleitner

3 Subsessions

Forecasting Via Reduced Big Data Matrices Under Lag-Sparsity Of Relevant Information
9:40 AM - 10:00 AM, Jun 28
150

The Reconciled Output Gap: A State-Space Framework To Model Revisions
10:00 AM - 10:20 AM, Jun 28
150

Integrating Forecasting And Optimization
10:20 AM - 10:40 AM, Jun 28
150

Macro 12: Monetary Policy and the Stock Market
9:40 AM - 10:40 AM, Jun 28
170

Regular Submis…

Chair: Gergely Ganics

3 Subsessions

Modelling The Reserve Demand To Facilitate Central Bank Operations
9:40 AM - 10:00 AM, Jun 28
170

Structural Changes In Asset Correlations And Macroeconomic Fundamentals
10:00 AM - 10:20 AM, Jun 28
170

Credit Market Sentiment And Stock Returns
10:20 AM - 10:40 AM, Jun 28
170

SWEET 4: Natural Gas Forecasting
9:40 AM - 10:40 AM, Jun 28
240

Invited Sess…

Chair: Richard Povinelli

3 Subsessions

Forecasting Natural Gas Consumption Using Mixed Frequency Dynamic Factor Models And Machine Learning Methods
9:40 AM - 10:00 AM, Jun 28
240

Forecasting Natural Gas Demand Using Hierarchical Frameworks
10:00 AM - 10:20 AM, Jun 28
240

Hourly Natural Gas Forecasting In The U.s.
10:20 AM - 10:40 AM, Jun 28
240

Combinations 2: Weighting and Trimming Methods in Aggregation
9:40 AM - 10:40 AM, Jun 28
40

Regular Submis…

Chair: Devon Barrow

3 Subsessions

● Forecast Combination: Between Equal And Individual Weights
9:40 AM - 10:00 AM, Jun 28
40

● Another Look At Forecast Trimming For Combinations: Robustness, Accuracy And Diversity
10:00 AM - 10:20 AM, Jun 28
40

● Combining Forecasts Based On Prediction Intervals
10:20 AM - 10:40 AM, Jun 28
40

10:40 AM

Coffee Break
10:40 AM - 11:10 AM, Jun 28
PepsiCo Forum

Coffee Break

11:10 AM

Past, Present, and Future of Feature Engineering in Demand Forecasting
11:10 AM - 12:30 PM, Jun 28
50

Practitioner Spe…

Authors: Alex Martin

Chair:Chris Fry

Abstract: Like many other industries in recent years the field of demand forecasting has experienced a rapid growth in available enterprise data. The parallel increase in popularity of tree-based and NN model architectures for forecasting allowed practitioners to start considering a larger number of features to improve model performance. However, the feature engineering process is often manual, slow, and requires large amounts of experience within the domain. Borrowing from experience with multiple large retailers this talk proposes a progressive framework for feature engineering from simple univariate features, to complex feature pipelines which can include multiple data modalities (tabular data, text and images) coming from a variety of internal sources and external datasets. We will also overview emerging research on automated feature engineering for time-series from algorithmic methods to semantic-aware feature extraction and engineering using Large Language Models (LLMs).

Speaker

Alex Martin
Product Manager
Google

Practitioner 8: Forecasting at SAS Part 3: Practitioners' Session Part 1
11:10 AM - 12:30 PM, Jun 28
120

Invited Sess…

Chair: Rajesh Selukar

4 Subsessions

● Composite Ai Using Forecasting And Optimization
11:10 AM - 11:30 AM, Jun 28
120

● Forecast Explainability Part 1: Improve Decision-Making And Forecast Adoption
11:30 AM - 11:50 AM, Jun 28
120

● Forecast Explainability Part 2: Insights From An Implementation For A Cpg Company
11:50 AM - 12:10 PM, Jun 28
120

● Forecasting At Scale In The Cloud
12:10 PM - 12:30 PM, Jun 28
120

Hierarchical 3: Methodology
11:10 AM - 12:30 PM, Jun 28
130

Regular Submis…

Chair: Mingmei Xiao

4 Subsessions

● Discrete Forecast Reconciliation
11:10 AM - 11:30 AM, Jun 28
130

● Exploring Robust Covariance Estimators On Forecast Reconciliation
11:30 AM - 11:50 AM, Jun 28
130

● Hierarchical Forecasting At Scale
11:50 AM - 12:10 PM, Jun 28
130

● High-dimensional covariance estimation with a diagonal target
12:10 PM - 12:30 PM, Jun 28
130

ML/AI 7: Decision-aware forecasting and allocation
11:10 AM - 12:30 PM, Jun 28
140

Invited Sess…

Chair: Suvrit Sra

4 Subsessions

● Deepplan – Forecasting As A Means To An End, I.e. Personalizing Demand Planning
11:10 AM - 11:30 AM, Jun 28
140

● Integrating Machine Learning And Optimization With Applications In Public Health And Sustainability
11:30 AM - 11:50 AM, Jun 28
140

● Explainable And Robust Electricity Forecasting For Decision-Making
11:50 AM - 12:10 PM, Jun 28
140

● Decision-Aware Learning For Global Health Supply Chains
12:10 PM - 12:30 PM, Jun 28
140

Time Series Models 5: Forecast and optimise

11:10 AM - 12:30 PM, Jun 28

150

Invited Sess…

Chair: Evgenii Genov

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4 Subsessions

Demand Forecast As An Input To Network Capacity Planning

11:10 AM - 11:30 AM, Jun 28

150

An Exploration Of Trained Ensemble Models For Epidemic Forecasting Based On Interval Scores

11:30 AM - 11:50 AM, Jun 28

150

The Effect Of Missing Value Imputation On Forecasting Population Abundance Depends On Both Model Structure And The Threshold Of Missing Values

11:50 AM - 12:10 PM, Jun 28

150

Assessing Quality Of Statistical Scenarios In A Stochastic Optimization In An Energy Management System

12:10 PM - 12:30 PM, Jun 28

150

Macro 13: Nowcasting

11:10 AM - 12:30 PM, Jun 28

170

Regular Submis…

Chair: J. Renato Leripio

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4 Subsessions

Nowcasting The State Of The Economy: An Application Of Linear Combinations Of Dynamic Common Factors To The Colombian Economy

11:10 AM - 11:30 AM, Jun 28

170

Nowcasting Recession Risk In The Us And The Euro Area

11:30 AM - 11:50 AM, Jun 28

170

Nowcasting World Trade With Machine Learning: A Three-Step Approach

11:50 AM - 12:10 PM, Jun 28

170

Nowcasting Inflation In Brazil Using Web Data

12:10 PM - 12:30 PM, Jun 28

170

Early Career Forecasters: Panel on International Collaborations

11:10 AM - 12:30 PM, Jun 28

240

Invited Sess…

Chair: Michal Chojnowski

1 Subsessions

● Early Career Forecasters' Panel: How To Work Efficiently In An International Environment?
11:10 AM - 12:30 PM, Jun 28
240

Finance 7: Financial Forecasting 1
11:10 AM - 12:30 PM, Jun 28
250

Regular Submis...

Chair: Levent Bulut

4 Subsessions

● Watch your tone!: Forecasting Base Metal Prices with financial report tone
11:10 AM - 11:30 AM, Jun 28
250

● Forecasting Corporate Treasury Operational Account Balances With Supervised Machine Learning Methods
11:30 AM - 11:50 AM, Jun 28
250

● "Fueling Predictability:" Can Commodity-Equities Forecast Fuel Prices?
11:50 AM - 12:10 PM, Jun 28
250

● Enhancing Corporate Earnings Forecasts: A Generalized Additive Model With Approximate Nearest Neighbors Algorithm
12:10 PM - 12:30 PM, Jun 28
250

Social Good 5: Forecasting vaccines
11:10 AM - 12:30 PM, Jun 28
30

Invited Sess...

Chair: Laila Akhlaghi

4 Subsessions

● Alternative routine vaccination forecasts and demand plans - A Mozambique case study
11:10 AM - 11:30 AM, Jun 28
30

● A Multi-Level Approach To Vaccine Forecasting And Demand In Nigeria: Implications For Micro-Level Immunization Sustainable Financing
11:30 AM - 11:50 AM, Jun 28
30

● Forecasting Childhood Health Vaccination Demand With Machine Learning
11:50 AM - 12:10 PM, Jun 28
30

● Vaccine Supply Forecasting By Private Health Care Providers Serving Urban Poor Communities: Lessons From The Private Sector
12:10 PM - 12:30 PM, Jun 28
30

Evaluation 3: Improving Forecast Accuracy
11:10 AM - 12:30 PM, Jun 28
40

Regular Submis...

Chair: Johann Robette

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4 Subsessions

Timenet: A Large-Scale Benchmark Dataset For Time Series Forecasting
11:10 AM - 11:30 AM, Jun 28
40

Polynomial Time Approximately Optimal Correlated Mechanism Design Using Constrained Proper Scoring Rules
11:30 AM - 11:50 AM, Jun 28
40

Forecast Augmentation from multiple participants vertically (downstream & upstream) and horizontally (multiple participants at the same level) in a supply chain
11:50 AM - 12:10 PM, Jun 28
40

Forecast Accuracy: How Much Is Too Much? Finding The Sweet Spot With Ceiling Analysis And Sensitivity Analysis
12:10 PM - 12:30 PM, Jun 28
40

12:30 PM

Lunch
12:30 PM - 1:30 PM, Jun 28
Abbott Dining Room

Lunch

1:30 PM

ML/AI 2: Forecasting with AI
1:30 PM - 2:30 PM, Jun 28
150

Invited Sess…

Chair: Lawrence Vanston

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3 Subsessions

Enhanced Forecasting With Lstvar-Ann Hybrid Model: Application In Monetary Policy And Inflation Forecasting
1:30 PM - 1:50 PM, Jun 28
150

Machine Learning For New Product Forecasting
1:50 PM - 2:10 PM, Jun 28
150

Prospects Of Ai For Long-Term Forecasting
2:10 PM - 2:30 PM, Jun 28
150

Strategic Collaboration: Transforming Theory into Reality when Making Forecasting Decisions in Criminal Justice
1:30 PM - 2:30 PM, Jun 28
50

Practitioner Spe…

Authors: Nick Powell

Chair:Elaine Deschamps

Abstract: Justice-involved people have often received the worst society has to offer. They have grown up with street violence and underfunded schools. A disproportionate number are dealing with poverty, homelessness, mental illness, and addiction. However, instead of addressing underlying issues, we brand people as ‘criminals,’ remove them from society and restrict their ability to work or receive services. As a result, a prevailing paradox characterizes our legal system: Criminal justice involvement perpetuates criminal justice involvement. Therefore, scholars and practitioners must collaborate on creating and implementing a new wave of forecasting tools for public service agencies. Fusing firsthand experience with empirical data, Dr. Nicholas Powell proposes four techniques to build strong forecasting partnerships that bridge the gap between academic knowledge and organizational realities in criminal justice settings.

Speaker

Nick Powell
Georgia State University

Practitioner 9: Supply Chains and Publishing in Foresight

1:30 PM - 2:30 PM, Jun 28

120

Regular Submis…

Chair: Michael Gilliland

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3 Subsessions

● Master Data Management: A Fundamental Element Of Supply Chain Management In An Mro Environment

1:30 PM - 1:50 PM, Jun 28

120

● Multiple Horizons, Partial Observability And Scale: The Challenges Of Predicting Materialization Rates In One Of The World’s Largest Shipping Networks

1:50 PM - 2:10 PM, Jun 28

120

● Publishing In Foresight

2:10 PM - 2:30 PM, Jun 28

120

Judgmental 3: Judge and Jury

1:30 PM - 2:30 PM, Jun 28

130

Invited Sess…

Chair: Shari De Baets

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3 Subsessions

● Is There A Hype Bias? The Perception Of Ai In Demand Forecasting

1:30 PM - 1:50 PM, Jun 28

130

● Discerning The Relationship Between Demand Realization, Task Information, Performance Information, And Supply Chain Forecasting

1:50 PM - 2:10 PM, Jun 28

130

● Forecast Value Added In Demand Planning: Questions For Meta-Analysis Of Empirical Evidence

2:10 PM - 2:30 PM, Jun 28

130

Macro 14: Measuring the global economy

1:30 PM - 2:30 PM, Jun 28

160

Invited Sess…

Chair: Menzie Chinn

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2 Subsessions

The Predictive Power Of The Yield Curve, Factors And Foreign Interest Rates For Economic Activity Across Countries

1:30 PM - 1:50 PM, Jun 28

160

Nowcasting Consumer Price Inflation Using High-Frequency Scanner Data: Evidence From Germany

1:50 PM - 2:10 PM, Jun 28

160

Macro 15: Macroeconomic Models

1:30 PM - 2:30 PM, Jun 28

170

Regular Submis…

Chair: Kurt Lunsford

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3 Subsessions

Improving Output Gap Estimation – A Bottom-Up Approach

1:30 PM - 1:50 PM, Jun 28

170

The Power of Many: The Procrustes Approach to Proxy-SVAR Identification with Multiple Instruments

1:50 PM - 2:10 PM, Jun 28

170

An Empirical Evaluation Of Some Long-Horizon Macroeconomic Forecasts

2:10 PM - 2:30 PM, Jun 28

170

Finance 8: Dynamic Models

1:30 PM - 2:30 PM, Jun 28

250

Regular Submis…

Chair: Pablo Pincheira

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3 Subsessions

Dynamics Of Kimchi-Premium And Its Determinants

1:30 PM - 1:50 PM, Jun 28

250

Mitigating The Choice Of The Duration In Ddms Models Through A Parametric Link

1:50 PM - 2:10 PM, Jun 28

250

An Unpleasant Feature Of The Historical Mean Forecast

2:10 PM - 2:30 PM, Jun 28

250

Social Good 6: Infectious Disease Spread

1:30 PM - 2:30 PM, Jun 28
30

Regular Submis…

Chair: Aaron Gerding

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2 Subsessions

State-Level Spatio-Temporal Forecasting Of Covid-19 Hospitalization With Uncertainty
1:30 PM - 1:50 PM, Jun 28
30

Infectious Disease Forecast Evaluation Based On Realized Social Utility
1:50 PM - 2:10 PM, Jun 28
30

2:30 PM

Coffee Break
2:30 PM - 2:40 PM, Jun 28
Auditorium

Coffee Break

2:40 PM

The role of judgment in forecasting
2:40 PM - 3:40 PM, Jun 28
Auditorium

Plenary

Authors: Dan Goldstein

Chair:Asa Palley

Abstract: What happens to the accuracy of forecasts when quantitative tools meet human minds? This talk will explore the role of judgment in forecasting and will cover the relative performance of human and model-based forecasts. It will introduce recent research on judgmental bootstrapping, a means of turning one's intuitions into model-based forecasts. I will conclude with some prescriptive advice for combining human judgment with the output of models.

Speaker

Dan Goldstein
Microsoft Research, Wharton School

3:40 PM

Closing Ceremony
3:40 PM - 4:30 PM, Jun 28
Auditorium

Speaker

George Athanasopoulos
Professor
Monash University