Time-Aware AI: Automated Time Series Analysis

Overview

Who doesn't want a glimpse into the future? When done well, forecasting allows you to set the market strategy, outperform competitors, run more efficiently and effectively, or proactively address consumer demands. Yet, the reality is that due to trade-offs in accuracy-informativeness, forecasts tend to include the correct answer less than 50% of the time*.

Delivering Automatic Time Series Forecasting

Getting value out of AI with your forecasts requires practical and timely insights. With DataRobot's Automated Time Series, you can get the richness, impact, and detail you need when you need it. As the only proven platform that delivers on the promise of AI with ROI, the DataRobot platform is an end-to-end solution that automates the entire AI lifecycle from model creation to deployment, monitoring, and management.

DataRobot's Automated Time Series solution makes scalable, hyper-granular, accurate forecasting a reality. Through the power of automation and the assistance of an intuitive UI, you can access a full spectrum of machine learning and deep learning models, as well as an extensive bench of time-based data science techniques. Highly configurable for real-world use-cases you can tackle multiple time-based AI scenarios such as conventional forecasting (i.e., future sales) and classification (i.e., the probability that an event occurs in the future). And because we automate the entire lifecycle, you can rest assured that you're getting the most value from your forecasting models in production and that they're behaving as expected.

Rapidly build, implement, manage, and monitor time-aware AI

> "DataRobot has been a game changer for us. It provides our experienced data scientists with an efficient framework to develop and deploy superior models, and it empowers our less experienced practitioners with a short learning curve to advance capabilities. DataRobot consistently impresses us with not only its outstanding partnership and support, but also with the evolution of its platform."
>
> — **Scott Crawford,**
> **Data Science Lead**
> **Kroger / 84.51**

* Harvard Business Review, "A Simple Tool for Making Better Forecasts"

DataRobot

Intuitive, Time-Aware AI

Empower your existing teams and talents, as well as increase your time-aware AI throughput with human-friendly visual insights, built-in automated algorithms, advanced time-aware feature engineering, and adjustable backtesting.

Built-in Advanced Data Science Techniques
Harness the latest knowledge, experience, and best practices of the world's leading time series data scientists, with a full spectrum of algorithms ranging from classical models to more recent deep learning approaches, all leveraging diverse feature engineering required to drive real performance.

Automatic, Parallel Creation of Forecasting Strategies and Data Transformations
Explore near-infinite combinations of data transformations, differencing methods, target transforms, algorithms, and tuning parameters that are automatically applied based on your data.

Automated Backtesting for Forecasts
Achieve the highest possible accuracy and prevent unintentional model overfitting or cheating with built-in, automatic time-aware backtests – the time series equivalent of cross-validation – that act as time-aware guardrails.

Multiple Time Series Best Practices Based on Time Horizon Detection
Deliver top-tier forecasts with automatic implementation of time series machine learning best practices that leverage different algorithms concurrently and that take stationarity and seasonality into account.

Prevent model overfitting with built-in, automatic time-aware backtests

Accuracy and Performance that Matters

Use advanced algorithms, time series modeling, and sophisticated forecasts to proactively address and anticipate changing conditions, instead of reacting to unexpected developments.

Unparalleled Out-of-the-Box Accuracy
Utilize advanced data science methods with over 1.3B state-of-the-art models that have undergone deep testing and extensive real-world hardening to get the most accurate predictions possible.

Deep Bench of Time Series Modeling Methods
Discover newer modeling methods and gain deep and accurate predictions by automatically applying series clustering, LSTM deep learning, per forecast distance models, blenders, alongside classical time series modeling such as ARIMA and VARMAX.

Deep Trust and Insights
Create sophisticated forecasts that measure accuracy by series, backtest stability, prediction confidence intervals with human-friendly visuals that are supported by exhaustive DataRobot benchmarking, and testing on thousands of datasets.

High-Granularity and Scalability
Build and deploy time-aware AI that learns from and forecasts hundreds of thousands of items at once.

Time-Aware AI For the Real-World

Unleash your team to create multiple and varied interpretations of the future and embed time-aware AI into existing tools and processes.

Flex How You Forecast at Any Level
Evaluate performance quickly on different levels of granularity by accessing forecasts for either a single series at a single location or multiple series across multiple locations.

Highly Configurable for Real-World Use Cases
Identify horizons, gaps, history constraints, mix lagged, and known-in-advance features, while automated inactivity detection (zero-inflated strategies) and irregular support ensure that you're capturing all moments in time, even the complex ones.

Automatically Quantify Forecast Stability
Understand if or when a model's performance may be changing over time with automated model monitoring.

Inject Time-Aware AI Into Your Existing Systems and Processes
Use automated and containerized API deployments that easily slipstream AI-driven forecasts into the existing business systems or processes your business depends on without requiring forklift upgrades.

Accurately Forecast with Confidence

"DataRobot Automated Time Series considers state-of-the-art approaches – I wasn't taught how to estimate XGBoost, Elastic Nets or Eureqa models. I certainly wouldn't be able to run these myself. I wouldn't know which one of many approaches would work best… whereas DataRobot tries them all and dives deeper on the ones that show early promise."

— Fortune 15 Global Bank

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