

Background

Organizational activities and resource management involve high uncertainty which leads to difficulties in handling various managerial activities like procurement, demand, resource acquisition and resource management. Hence, forecasting has attracted substantial attention in recent years and it is one of the most important activities within an organization. Forecasting is one of key focus areas of the different industries. Forecasting help managers and policy makers to plan their business. Without accurate forecasting it is difficult to make proper business plan. Time series analysis used in various area of research include Operations, Finance, Economics, etc. Forecasting is generally used for future planning.

Objectives

- To familiarize the participants with the importance of forecasting in business.
- To familiarize the participants with different tools and techniques to analyze the data patterns in order to identify suitable forecasting models.
- To introduce the participants with different traditional and advanced forecasting techniques dealing with both homoscedastic and heteroskedastic data using MATLAB and Python.

“Businesses can be competitive when they use forecasting methods in their processes”.

About IIM Shillong

Located in the green contours of the North-Eastern part of the country, IIM Shillong commenced its operation in 2008. It remains committed to excellence in management education and research to evolve into a national and internationally recognized educational institute. High-quality standards and academic rigor are considered the hallmark of IIM Shillong. IIM Shillong emphasizes sustainable development in business practices. The institute strives to impact its students' ethical values, compassionate behavior, and concern for society.



5-day Workshop on Comprehensive Time Series Forecasting (Online weekend lectures)

17th August to 31st August 2025

BATCH 3



Indian Institute of Management Shillong
Umsawli, East Khasi Hills
Meghalaya - 793018, India

Topics to be Covered

- Introduction to forecasting, type of forecasts, purpose of forecasting, steps in forecasting, type of data pattern: horizontal, trend, seasonal and cyclical.
- Exploring data pattern for stationary, non-stationary, trend, seasonal data series, lag, time series plot, run test, Durbin Watson test, autocorrelation function (ACF), PACF plot, Ljung-Box Q test Transformation of data series.
- Time series moving average models: simple moving average, centered moving average, weighted moving average, double moving average. Exponential smoothing models: Single exponential smoothing, double exponential smoothing (Holt's model), triple exponential smoothing (Holt-Winters') model.
- Autocorrelation function (ACF), Partial Autocorrelation function (PACF), stationarity test: Unit root test (ADF test, KPSS test, PP test.
- Autoregressive (AR) model with order one and higher order, Moving average (MA) model with one and higher order, ARMA, ARIMA model.
- Engle's ARCH test, Ljung-Box Q-test, variance ratio test, Different models to deals with heteroscedastic data series like ARCH, GARCH, EGARCH, GJR.
- Introduction to Deep Learning and neural networks, prediction using different models like MLP, CNN, LSTM, LSSVM.
- Introduction to Machine Learning for Business Forecasting; LASSO, Ridge Regression, Elastic net, SVM.
- Decision tree: Random forest, Ensemble and practice session
- Discussion of various research articles with applied time series models.



Pedagogy

- Lectures and Research papers/Case Studies discussion
- Hands-on with MATLAB and Python
- Study Material Provision for Pre-class preparation

Mode of the Workshop: weekend

Online mode and duration is 30hrs

Who can join:

Research Scholars, Academicians and industry practitioners intending to apply various traditional and advanced time series models in their work are invited.

Registration fee:

Rs.10,000 + GST (18%) per participant. The registration includes

- Program certificate
- Study material (softcopy of reading material)
- Software access.

Registration process:

*For registration copy and paste following link on browser

<https://erp.iimshillong.ac.in/fee/PaymentPortal/GeneralPayment.aspx?p=50P9HP1k9Dfc%2bPXVr1ZEzg3naWzgC1PE2ubir5lbprPBxASTy0pDDz5wx%2fVxtme%2fY1%2fflgR8hvijq8yydsrZw50KX9GgrRWjfpHWkiczfO07Ze6P4rteCeFm6%2fW%2bQLzeCet17hn1kXnHL%2b6k%2bcR4iQH2aJZFaVulx2JXZsFRk9TKkuGcPlmDlyhzGT%2fm2Zdf%2b8EA1tMjmJ0JOoryci4JYdgrBiGILqTsOYVISMTuUMB9XcXzFdcUurtGK%2fqoEY>

* Once payment done keep a copy of the payment receipt and also share the same to email id:

sanjita@iimshillong.ac.in.

Upon receipt of the online registration form and fee remittance receipt, participants will be sent confirmation of their participation through email.

Candidates are advised to register at the earliest as the number of seats is limited.

In case we do not get the minimum number of registration, then workshop will be cancelled, and the fee will be refunded.

Resource Persons



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