

Time Series

Unit 1:

1. Define the different components of a time series using Bloom's Taxonomy.
2. Classify time series data based on trend and seasonality characteristics.
3. Analyze trend and seasonality in time series data.
4. Apply exponential smoothing techniques to time series data.
5. Evaluate stationarity in time series data.
6. Interpret the autocorrelation and partial autocorrelation functions in time series analysis.
7. Compare and contrast Moving Average, Autoregressive, and Autoregressive Moving Average processes.
8. Construct ARIMA and SARIMA models for time series forecasting.
9. Utilize Dickey-Fuller and Augmented Dickey-Fuller tests for unit root analysis.
10. Examine tests for randomness in time series data.
11. Develop an ARIMA model using the Box-Jenkins approach.

Unit 2:

12. Model volatility using Autoregressive conditionally heteroscedastic (ARCH) models.
13. Formulate Generalised ARCH (GARCH) models for volatility analysis.
14. Modify and apply variants of the GARCH model to time series data.
15. Estimate ARCH/GARCH models for volatility forecasting.
16. Construct an ARCH/GARCH model for volatility prediction.

Unit 3:

17. Implement Piecewise Linear Models, Markov switching models, and Threshold autoregressive models.
18. Estimate State Space Models and apply Kalman Filtering techniques.
19. Analyze time series data in the frequency domain using Spectral density function.
20. Conduct Periodogram Analysis for frequency domain interpretation.

Select Language 

Powered by  Google Translate

