

[L4-TS] Introduction to Times Series Analysis - Online

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| Session 1 | |
| What are Time Series Predictions? | What is Time Series Analysis? Use Cases for Time Series Analysis Univariate vs Multivariate Time Series Analysis |
| Data Cleaning and Data Transformation | Missing value imputation Aggregations on different time scales |
| Time Series Visualization | Time Plots on different scales for seasonality patterns Seasonal Box Plot Lag Plots |
| Session 2 | |
| Descriptive Analysis | Stationarity, Trend, and Seasonality ACF/PACF and Cross-Correlation Functions 1 st , 2 nd , N order differences as non-stationarity removal Techniques for seasonality removal |
| Scoring Metrics | Error Metrics (R^2 , RMSE, MAPE, MAE, ...) |
| Session 3 | |
| Basic Prediction Models | Naïve Forecasting |
| ARIMA Models | AR, ARMA, ARIMA Residual Analysis |
| Session 4 | |
| Machine Learning Models | AR Via ML Models (also on Spark) Parameter Optimization |
| Deploying a Model | Predictor Nodes Predicting the future with a Recursive Loop |
| Overview of LSTM Models | Deep Learning for Time Series; Short Intro |
| Session 5 | |
| Review and Q&A | Final exercise review and Questions |