

[L4-TS] Times Series Analysis: Specialization

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