London TDM

Artificial Intelligence and Data Science Training Courses

Course Venue: Malaysia - Kuala Lumpur

Course Date: From 01 March 2026 To 05 March 2026

Course Place: Royale Chullan Hotel

Course Fees: 6,000 USD

Introduction

Time series analysis plays an essential role in data science, enabling professionals to analyze data that is observed over time to uncover trends, seasonal patterns, and cyclical behaviors. This 5-day professional course provides a comprehensive introduction to the principles, methodologies, and practical applications involved in time series analysis. Participants will gain hands-on experience and learn how to apply various time series techniques to real-world datasets.

Objectives

- Understand the fundamental concepts of time series data and its components.
- Learn to visualize and explore time series data for insightful analysis.
- Master time series forecasting models to predict future trends.
- Gain proficiency in using statistical software for time series analysis.
- Apply time series techniques to real-world data science problems.

Course Outlines

Day 1: Introduction to Time Series Analysis

- Overview of time series analysis and its importance
- Types and components of time series data
- Time series data exploration and visualization
- Basic statistical concepts for time series
- Introduction to software and tools for time series analysis

Day 2: Time Series Decomposition and Smoothing Techniques

- Understanding time series decomposition: Trend, seasonal, and residual components
- Moving averages and exponential smoothing
- Decomposition methods: Additive and multiplicative
- Practical exercises on smoothing and decomposition techniques
- Case studies and real-world examples

Day 3: Time Series Models and Forecasting Techniques

- Introduction to time series forecasting
- Autoregressive (AR) and Moving Average (MA) models
- Autoregressive Integrated Moving Average (ARIMA) models
- Seasonal ARIMA (SARIMA) and ARIMAX models
- Hands-on forecasting exercises using software

Day 4: Advanced Time Series Modeling

- Introduction to state space models and Kalman filter
- Understanding GARCH models for volatility prediction
- Nonlinear models and machine learning approaches to time series
- Using R and Python for advanced time series modeling
- Interactive sessions with real-world datasets

Day 5: Practical Applications and Industry Use Cases

- Time series applications in finance, economics, and supply chain
- Project: Developing a time series model for a business problem
- Evaluating model performance and accuracy
- Presentation of project findings and peer review
- Course recap and Q&A session