Application of Machine Learning in Supply chains

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Artificial Intelligence and Innovation

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- Location: London
- Date: From 3/2/2025 To 7/2/2025
- Investment: \$5950 (Excluding VAT)



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Course Introduction

This 5-day intensive course explores the transformative power of Machine Learning (ML) in revolutionizing modern supply chains. Participants will gain a comprehensive understanding of how to leverage ML algorithms to optimize key supply chain processes, enhance efficiency, reduce costs, and gain a competitive advantage. The program combines theoretical concepts with practical applications, including hands-on exercises, case studies, and demonstrations of industry-leading tools.

Training Method

- Pre-assessment
- Live group instruction
- Use of real-world examples, case studies and exercises
- Interactive participation and discussion
- Power point presentation, LCD and flip chart
- Group activities and tests
- Each participant receives a binder containing a copy of the presentation
- slides and handouts
- Post-assessment



Course Objectives

Upon successful completion of this course, participants will be able to:

- Understand the fundamentals of Machine Learning: Grasp core ML concepts, algorithms (e.g., regression, classification, clustering), and their applications in supply chain.
- Apply ML techniques to key supply chain processes: Leverage ML for demand forecasting, inventory optimization, transportation planning, risk management, and more.
- Develop and implement ML models: Build and deploy ML models for specific supply chain challenges using relevant tools and technologies.
- Analyze and interpret ML model results: Evaluate model performance, identify areas for improvement, and communicate insights to stakeholders.
- Identify and address ethical and societal implications: Understand the ethical considerations and potential biases associated with the use of ML in supply chains.
- Stay abreast of emerging trends: Explore the latest advancements in AI and ML within the context of supply chain management.

Who Should Attend?

This course is designed for professionals involved in supply chain management, logistics, operations, and data analytics. Ideal candidates include:

- Supply Chain Managers
- Logistics Specialists
- Operations Managers
- Data Analysts
- Business Analysts
- IT Professionals
- Anyone interested in leveraging AI/ML to improve supply chain performance

Course Outline

Day 1: Foundations of Machine Learning for Supply Chain

- Morning:
 - Introduction to Machine Learning: Types of ML (supervised, unsupervised, reinforcement), key concepts (data, algorithms, models)
 - Data Preparation for ML: Data cleaning, feature engineering, data visualization
 - Introduction to Python for Data Science: Essential libraries (Pandas, NumPy, Scikit-learn)
- Afternoon:
 - Supervised Learning Algorithms: Regression, classification, time series forecasting
 - Hands-on Exercise: Basic data analysis and model training using Python

Day 2: Demand Forecasting and Inventory Optimization

- Morning:
 - Demand Forecasting Techniques: Time series analysis, moving averages, exponential smoothing
 - Machine Learning for Demand Forecasting: ARIMA models, Prophet, deep learning
 - Inventory Management Strategies: EOQ, ABC analysis, safety stock
- Afternoon:
 - Case Study: Applying ML to optimize inventory levels and reduce stockouts

Day 3: Transportation and Logistics Optimization

- Morning:
 - Route Optimization: Vehicle routing problems, TSP (Traveling Salesman Problem), optimization algorithms
 - Transportation Mode Selection: Machine learning for selecting the most efficient transportation mode
 - Freight Forecasting: Predicting freight demand and optimizing transportation capacity
- Afternoon:
 - Hands-on Exercise: Developing an ML model for route optimization

Course Outline

Day 4: Risk Management and Supply Chain Resilience

- Morning:
 - Supply Chain Disruptions: Identifying and assessing potential risks (natural disasters, pandemics, geopolitical events)
 - Predictive Maintenance: Using ML to predict equipment failures and prevent disruptions
 - Fraud Detection: Identifying and preventing fraudulent activities in the supply chain
- Afternoon:
 - Case Study: Developing an ML-based early warning system for supply chain disruptions

Day 5: Advanced Topics and Future Trends

- Morning:
 - Explainable AI (XAI) for Supply Chain: Understanding and interpreting ML model decisions
 - Ethical Considerations: Bias, fairness, and transparency in ML applications
 - Digital Twin Technology: Creating virtual representations of supply chains for simulation and optimization
- Afternoon:
 - Emerging Trends: Blockchain in supply chain, AI-powered robotics, the future of supply chain management
 - Q&A and Wrap-up Session

Registration & Payment

Complete & Mail to London Royal Academy or email registration@londonra.com

Registration Form

 Full Name (Mr / Ms / Dr / Eng) 	
• Position	
Telephone / Mobile	
• Personal E-Mail	
• Official E-Mail	
Company Name	
Address	
• City / Country	

Payment Options

Please invoice mePlease invoice my company

Terms & Conditions

Complete & Mail to London Royal Academy or email

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Cancellation and Refund Policy

Delegates have 14 days from the date of booking to cancel and receive a full refund or transfer to another date free of charge. If less than 14 days' notice is given, then we will be unable to refund or cancel the booking unless on medical grounds. For more details about the Cancellation and Refund policy, please visit

www.londonra.com/terms-and-conditions/

Registration & Payment

Please complete the registration form on the course page & return it to us indicating your preferred mode of payment. For further information, please get in touch with us

Course Materials

The course material, prepared by the LRA, will be digital and delivered to candidates by email

Certificates

Accredited Certificate of Completion will be issued to those who attend & successfully complete the programme.

Travel and Transport

We are committed to picking up and dropping off the participants from the airport to the hotel and back.



VENUES

- LONDON
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THANK YOU

CONTACT US

- **L** +44 2080898183
- 🔁 info@londonra.com
- Mayfair Office: 1 Mayfair Pl, 1st Floor,

W1J 8AJ London, UK

- © City Office :124 City Road, EC1V 2NX London, UK
- Oubai Office :Park Towers,

DIFC Office 7

CH No: 15668865



