

**Data Science and Machine Learning (ML) Trends Seminar**

**Course Number:** DATA-144WA  
**Duration:** 1 day

**Overview**

This Data Science and Machine Learning (ML) Trends course gives attendees an overview of the latest trends in Data Science and ML. By the end of this seminar, attendees have a thorough understanding of data science and ML and what the future may hold.

**Prerequisites**

No prior experience is presumed.

**Materials**

All ML seminar attendees received a copy of the instructor’s presentation.

**Software Needed on Each Student PC**

Online deliveries for this interactive training will use an online meeting platform (such as Zoom, WebEx, GoTo, or Teams.)

**Objectives**

* Understand the evolution of data science and machine learning and the major trends that are shaping these fields today
* Learn about the real-world applications of current trends in data science and machine learning
* Gain insights into the current R&D and upcoming developments in data science and machine learning

**Outline**

* Introduction
* Data (Science) is King
  + A brief introduction to Data Science and Machine Learning
  + Speed of Changes in DS/ML Development
  + Importance of keeping up with current trends
* Evolution of Data Science and Machine Learning
  + Brief history of Data Science and Machine Learning
  + The AI Winters and Breakthroughs
  + Origins in Web Search: Big Data and Data Science
  + Advances due to GPU’s and Compute Power
  + Influence of these fields on industry and society
* Major Trends in Data Science
  + Automation in Data Science
  + The rise of Augmented Analytics
  + The impact and importance of Data Privacy
  + Data Storytelling and visualization
  + The role of Big Data in modern businesses
* Major Trends in Machine Learning
  + AutoML and Neural Architecture Search (NAS)
  + Advances in Natural Language Processing (NLP) and Large Language Models (LLM’s)
  + Explainable AI (XAI)/Machine Learning Interpretability (ML)
  + Transfer Learning and Pre-Trained Models
  + AI Engineering and Rapid ML Application Development
* Case Studies
  + Success stories in Data Science
  + Significant breakthroughs in Machine Learning
  + Demonstrations of real-world application of current trends
* Current R&D and Upcoming Developments
  + Federated Learning and Edge AI
  + Multimodal Learning
  + Reinforcement Learning in Real-world Scenarios
  + Automated Bias and Fairness Detection in AI
* Conclusion