QUEST
Professional Center

PROFESSIONAL TRAINING COURSE

Course No. 1195

Neural Networks Training Course

MACHINE LEARNING & COMPUTER VISION
ARTIFICIAL INTELLIGENCE & APPLICATIONS

DURATION
5 Days

DELIVERY
Classroom

Course Overview

The Neural Networks Training Course is a comprehensive professional development program designed to equip executives, managers, AI specialists, machine learning engineers, data scientists, software engineers, and technical professionals with the knowledge and practical skills required to understand, design, develop, and implement neural network solutions in modern organizations. Neural networks form the foundation of deep learning and many of today's most advanced Artificial Intelligence technologies, enabling organizations to automate complex decision-making, extract valuable insights from massive datasets, and build intelligent systems capable of learning from experience. This course provides participants with a structured understanding of neural network architectures, training methodologies, and enterprise implementation strategies.

Government entities, ministries, public sector organizations, banks and financial institutions, oil and gas companies, manufacturing organizations, healthcare providers, telecommunications companies, educational institutions, transportation authorities, logistics providers, and multinational corporations increasingly rely on neural networks to improve operational efficiency, automate business processes, enhance customer experiences, detect fraud, optimize predictive maintenance, analyze images and video, process natural language, strengthen cybersecurity, and support strategic decision-making. As organizations accelerate digital transformation initiatives, neural networks have become an essential technology for solving complex business challenges that traditional programming approaches cannot efficiently address.

This course covers the complete lifecycle of neural network development, beginning with the mathematical foundations of neural networks and progressing through data preparation, feature engineering, model architecture selection, training methodologies, optimization techniques, hyperparameter tuning, performance evaluation, deployment, monitoring, and continuous improvement. Participants will explore Artificial Neural Networks (ANNs), Convolutional Neural Networks (CNNs), Recurrent Neural Networks (RNNs), Attention Mechanisms, deep learning frameworks, explainable AI, MLOps fundamentals, responsible AI, governance, cybersecurity, privacy, regulatory compliance, and enterprise implementation best practices. Real-world business cases and practical exercises demonstrate how neural networks solve industry-specific challenges across multiple sectors.

The Neural Networks Training Course combines expert instruction, interactive workshops, hands-on laboratories, enterprise case studies, and internationally recognized best practices to help participants confidently develop, evaluate, and deploy neural network solutions. By the end of the

course, participants will be capable of designing intelligent AI systems, improving predictive performance, integrating deep learning models into enterprise environments, supporting innovation initiatives, and contributing to sustainable organizational growth through responsible Artificial Intelligence adoption.

Objectives

- Analyze the principles, architectures, and enterprise applications of neural networks.
- Develop practical skills for designing, training, and optimizing deep learning models.
- Evaluate business opportunities suitable for neural network implementation.
- Apply Artificial Neural Networks, Convolutional Neural Networks, and Recurrent Neural Networks to solve organizational challenges.
- Design AI-powered solutions that improve business performance and operational efficiency.
- Improve model accuracy through optimization, hyperparameter tuning, and performance evaluation.
- Strengthen understanding of explainable AI, responsible AI, governance, cybersecurity, privacy, and regulatory compliance.
- Implement best practices for deploying, monitoring, and maintaining enterprise neural network solutions.
- Assess technical, operational, ethical, and security risks associated with neural network applications.
- Align neural network initiatives with digital transformation strategies, innovation objectives, and organizational goals.

Who Should Attend

This course is designed for executives, digital transformation leaders, AI specialists, machine learning engineers, deep learning practitioners, data scientists, software developers, IT managers, solution architects, innovation managers, project managers, business analysts, data engineers, consultants, researchers, and decision-makers responsible for Artificial Intelligence strategy and enterprise AI implementation.

The program is equally valuable for professionals working in government entities, ministries, public sector organizations, banks and financial institutions, oil and gas organizations, manufacturing

companies, healthcare providers, educational institutions, telecommunications companies, logistics providers, consulting firms, and multinational corporations seeking to leverage deep learning technologies to improve operational performance, automate business processes, and accelerate innovation.

Professionals responsible for predictive analytics, intelligent automation, cybersecurity, fraud detection, quality assurance, predictive maintenance, computer vision, natural language processing, enterprise analytics, governance, compliance, research and development, and AI innovation will benefit from the practical methodologies and implementation frameworks presented throughout the course.

Learning Outcomes

- By the end of this course, participants will be able to:
- Explain the principles, architectures, and learning mechanisms of neural networks.
- Prepare datasets for deep learning model development.
- Design and train Artificial Neural Networks for predictive business applications.
- Develop Convolutional Neural Networks and Recurrent Neural Networks for advanced AI solutions.
- Evaluate neural network performance using appropriate validation and optimization techniques.
- Apply hyperparameter tuning and model optimization methods to improve prediction accuracy.
- Implement explainable and responsible AI practices while ensuring governance, cybersecurity, privacy, and regulatory compliance.
- Deploy neural network models into enterprise environments using industry best practices.
- Identify strategic opportunities for applying neural networks across multiple business functions.
- Develop implementation roadmaps for scalable enterprise deep learning adoption.

Course Outline

DAY 01

Foundations of Neural Networks

- Introduction to Artificial Intelligence and Deep Learning
- Fundamentals of neural networks
- Mathematical foundations and learning mechanisms
- Business applications of neural networks

PRACTICAL WORKSHOP ON IDENTIFYING ENTERPRISE AI USE CASES

DAY 02

Designing and Training Neural Networks

- Data preparation and feature engineering
- Artificial Neural Networks (ANNs)
- Model training methodologies
- Performance evaluation and optimization

PRACTICAL EXERCISE

Practical exercise on building predictive neural network models

DAY 03

Advanced Neural Network Architectures

- Convolutional Neural Networks (CNNs)
- Recurrent Neural Networks (RNNs)
- Attention Mechanisms and modern deep learning architectures
- Applications in Computer Vision and Natural Language Processing

WORKSHOP ON DEVELOPING ADVANCED DEEP LEARNING SOLUTIONS

DAY 04

Enterprise Neural Network Implementation

- Integrating neural networks into enterprise systems
- Model deployment, monitoring, and MLOps fundamentals
- Explainable AI, responsible AI, governance, cybersecurity, privacy, and regulatory compliance
- Measuring business performance and operational impact

PRACTICAL

Practical workshop on implementing enterprise neural network solutions

DAY 05

Building an Enterprise Deep Learning Strategy

- Future trends in neural networks and deep learning
- Scaling enterprise AI capabilities
- International best practices for enterprise implementation
- Organizational change management and continuous innovation

FINAL WORKSHOP

Final workshop involving the development of a comprehensive enterprise neural network strategy integrating Artificial Neural Networks, Convolutional Neural Networks, Recurrent Neural Networks, Attention Mechanisms, deep learning optimization, explainable AI, responsible AI, MLOps, governance, cybersecurity, privacy, regulatory compliance, performance measurement, organizational readiness, risk management, and continuous improvement to maximize operational excellence, digital transformation, innovation, and sustainable business success.

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Register or Request More Information

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