skillsoft global knowledge™

AI, MACHINE LEARNING & DEEP LEARNING ESSENTIALS

Course Code: 840014

Explore AI, ML and DL Differences, Advantages, Modern Uses. Techniques for Adoption, Tools, Algorithm's and More

Introduction to AI, Machine Learning & Deep Learning Essentials is an engaging, hands-on training program designed to provide students new to these areas with a baseline understanding of the core technologies, skills, business application and tools surrounding them. These fast growing, critical technologies are currently shaping the future of IT, development and analytics.

This program combines hands-on machine-based labs, live demonstrations and discussions that explore current trends, tools and skills, as well as advances in these areas. Working in a hands-on manner, attendees will gain a basic understanding of terms, skills and capabilities in this technology stack, providing them with a solid foundation for next-step learning as they pursue defined roles in these areas.

What You'll Learn

Led by our expert AI / Machine Learning practitioner, students will learn about and explore:

- The What and Why of AI, Machine Learning & Deep Learning – why is this important and exciting?
- Getting the Basics: High-level skills, vocabulary and terminology
- AI, Machine Learning and Deep Learning – what are the differences and uses?
- Latest trends and research
- Who’s Using It and to What Advantage?
- How to adopt AI, ML and DL
- Hands-on Machine Learning – algorithms, neural networks, natural language processing & more
- Tools and Languages: Python, R, Spark, TensorFlow, Keras
- Deep Learning Essentials

Prerequisites

The general pre-requisite items below would be helpful for attendees to familiarize themselves with in order to gain the most from the discussions and hands-on labs work planned for each general related skills area listed below. Students without

supporting experience in certain areas can plan to follow along with labs or utilize them as demonstrations.

Some of the related useful skills

- **Required - Enterprise IT / Business Knowledge**: Attendees should have some familiarity with Enterprise IT as well as a general (high-level) understanding of systems architecture, as well as some knowledge of the business drivers that might be able to take advantage of applying data science, AI and machine learning.
- **Recommended - Advanced Math / Statistics**: Advanced math and essentials statistics knowledge is useful in understanding and working with Algorithms
- **Recommended – Basic Language / Scripting Knowledge**: Basic Python (or R) scripting is applicable to machine learning and deep learning. Basic Java is useful for working with some of the advanced tools such as Spark or TensorFlow.

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VIRTUAL CLASSROOM LIVE	$2,295 USD	3 Day

Virtual Classroom Live Outline

Exploring Data Science – The Foundation of AI, Machine Learning & Deep Learning

- What is Data Science?
- New Ways of Thinking about and using Data
- Challenges of processing
- Technologies
- Strategies
- Where does data science fit in?
- DS ecosystem – AI, Machine Learning, Deep Learning
- Data and the Scientific Method
- Data Science vs. Data Engineering
- Sharing Results with Colleagues
- Recording experiments
- The Data Science Team members
- Data Science Infrastructure
- Current Tools, Trends & Technologies
- Applying Data Science to Your Industry

Understanding AI

- AI - How did we get here?
- Recent advances in data, hardware
- Cutting edge research and applications
- Getting the basics: Core terms and vocabulary

Understanding Machine Learning

- Who is leveraging this and why
- Overview of ML – what's the difference?
- Related examples of ML algorithms and applications

- Surrounding tools and technologies: Python and Spark

Machine Learning

- Supervised vs. Unsupervised
- Classification
- Regression
- Clustering
- Dimensionality Regression
- Ensemble Methods

Understanding Deep Learning

- What is it, and how is this different than AI and ML?
- Who's using Deep Learning and Why
- Deep Learning algorithms and applications
- Surrounding tools and technologies: Python, TensorFlow, Keras

Expert Systems

- Rules Systems
- Feedback loops
- RETE and beyond
- Expert Systems in practice

Neural Networks

- Neural Networks
- Recurrent Neural Networks
- Long-Short Term Memory Networks
- Applying Neural Networks

Natural Language Processing

- Language and Semantic Meaning
- Bigrams, Trigrams, and n-Grams
- Root stemming and branching
- NLP in the world

Image, Video, and Audio Processing

- Image processing and Identification
- Facial Analysis
- Audio Processing
- Analyzing Streaming Video
- Real-world AV processing

Sentiment Analysis

- Sentiment: The beginnings of emotional understanding
- Sentiment indicators
- Sentiment Sampling
- Algorithmic Trading on Sentiment
- Predicting Elections

Current Tools of the Trade - AI, ML & DL - Software Ecosystem

- Python, NumPy, Pandas, SciKit
- Hadoop and Spark
- NoSQL Databases
- TensorFlow, Keras, and NLTK
- Drools
- Libraries
- Cloud offerings

Making it Happen: How to Adopt AI & ML in Enterprises

- Technology stack
- Assembling an effective team
- Process – how does this all come together
- Best Practices – what do your people need to succeed

Resources – where to find more information

Time Permitting: Capstone Project

- Hands-on guided workshop utilizing skills learned throughout the course

Jul 14 - 15, 2025 | 10:00 AM - 6:00 PM EDT

Sep 15 - 16, 2025 | 10:00 AM - 6:00 PM EST

Nov 12 - 13, 2025 | 10:00 AM - 6:00 PM EST

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PRIVATE GROUP TRAINING	3 Day

Visit us at www.globalknowledge.com or call us at 1-866-716-6688.

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