DEEP LEARNING ESSENTIALS BOOT CAMP

Course Code: 840014

Quick Start to working with neural networks, data preprocessing, and model optimization, using Python, TensorFlow and Keras for deep learning

Jumpstart your deep learning journey with this intensive two-day Deep Learning Essentials Boot Camp. In this hands-on course, you'll gain the practical skills needed to apply deep learning techniques using TensorFlow to solve real-world data problems. Deep learning, a key subset of machine learning, powers advancements in AI by mimicking the way the human brain processes information, enabling you to build models that handle complex data and make accurate predictions for your organization.

The course will guide you through the essential topics required for deep learning proficiency. You'll begin with the foundational concepts of machine learning and neural networks, followed by implementing these networks using TensorFlow. Along the way, you'll learn how to preprocess data, work with different data types, and enhance model performance through regularization and hyperparameter tuning. The course also explores advanced topics such as classification models, transfer learning, and the use of pre-trained networks like ImageNet. With 40% of the course dedicated to hands-on labs, you'll gain experience building, training, and optimizing models in real-time using the latest tools and techniques.

By the end of the course, you will have a solid understanding of how to build deep learning models from scratch, tune them for better performance, and use pre-trained networks to speed up development. With guidance from an industry expert and exposure to state-of-the-art tools, you'll leave equipped to apply deep learning strategies to your organization's data-driven initiatives.

What You'll Learn

This course combines engaging instructor-led sessions, valuable demonstrations, and hands-on labs designed to help you:

- Understand and implement neural networks using TensorFlow, a powerful deep learning framework.
- Load, preprocess, and manage various types of data including tabular, image,

text, and audio data.
- Build and optimize regression and classification models, learning key metrics and techniques for tuning performance.
- Utilize TensorFlow tools like TensorBoard for model visualization and TensorFlow Hub for leveraging pre-trained networks.
- Apply regularization techniques and tune hyperparameters to improve model generalization.
- Explore advanced deep learning strategies like transfer learning, feature extraction, and using pre-trained networks to accelerate model development.

Who Needs to Attend

This course is designed for technical professionals who are ready to integrate deep learning into their data projects. It's ideal for data scientists, developers, machine learning engineers, and analysts who want to extend their skill set into deep learning. It's also suited for business analysts and other technical stakeholders involved in data-driven decision-making who need to understand the potential of deep learning in solving complex business challenges. Python experience is required.

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VIRTUAL CLASSROOM LIVE	$2,984 CAD	3 Day

Virtual Classroom Live Outline

1. **Introduction to Machine Learning with TensorFlow**
   - Implementing Artificial Neural Networks in TensorFlow
   - The TensorFlow Library
   - Introduction to Tensors
   - Tensor Addition
   - Reshaping
   - Tensor Multiplication
   - Optimization
   - Activation functions
2. **Loading and Processing Data**
   - Understand how to create an effective deep learning environment.
   - Exploring Data Types
   - Data Preprocessing
   - Processing Tabular Data
   - Processing Image Data
   - Image Augmentation
   - Text Processing
   - Audio Processing
3. **TensorFlow Development**
   - TensorBoard
   - TensorFlow Hub
4. **Regression and Classification Models**
   - Introduction
   - Sequential Models
   - Model Fitting
   - Classification Models
5. **Classification Models**

- Introduction
- Binary Classification
- Metrics for Classifiers
- Multi-Class Classification
- Multi-Label Classification

6. **Regularization and Hyperparameter Tuning**
   - Regularization Techniques
   - Hyperparameter Tuning
7. **Pre-Trained Networks**
   - ImageNet
   - Transfer Learning
   - Fine-Tuning
   - TensorFlow Hub
   - Feature Extraction

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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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