Mastering Deep Learning: An Intensive Boot Camp

Duration: *2 Day(s)*

Course Overview

Embark on a practical journey in our two-day Mastering Deep Learning Boot Camp, where you'll harness the power of deep learning—a sophisticated subset of machine learning that uses artificial neural networks to mimic human thought processes. This immersive course provides extensive coverage of key topics, including proficiency in TensorFlow and Keras, and offers 40% hands-on lab work to bridge theory with practice. Conclude the course empowered to build, train, and deploy solutions using deep learning principles leveraging Python.

Review this course online at https://www.alta3.com/courses/A3-AI3012

Objectives

- Master foundational deep learning concepts and mathematics.
- Utilize Anaconda and Jupyter Notebook expertly.
- Develop and deploy neural networks with Python and TensorFlow.
- Optimize and fine-tune deep learning models for peak performance.

Who Should Attend

- Experienced data analysts
- Tech-savvy product managers
- Advanced software developers
- Team leads in tech fields

Prerequisites

- Fundamental Python programming
- Basic data manipulation with NumPy, Pandas
- Familiar with variables, functions, control flow
- Classical machine learning concepts
- Basic knowledge of algebra, calculus

Course Outline

Introduction to Deep Learning

1. Learn the impact of deep learning on business.
2. Explore neurons, layers, weights, biases, and activation.
3. Discover business applications of deep learning.

Setting up Deep Learning Environment

4. Craft an effective environment for deep learning.
5. Navigate Anaconda and Jupyter Notebook essentials.
6. Lab: Establish a Python setup.

Introduction to TensorFlow and Keras

7. Overview of TensorFlow and Keras functionality.
8. Construct a neural network using Keras.
9. Lab: Develop a basic neural network model.

Fundamentals of Neural Networks

10. Define neural networks and their operations.
11. Study forward and backward propagation.
12. Lab: Apply a Multi-Layer Perceptron to a dataset.

Working with Data in Deep Learning

13. Importance of data preprocessing in learning.
14. Manage and prepare diverse data types.
15. Lab: Process a dataset for learning tasks.

Tuning and Optimizing Deep Learning Models

16. Utilize optimizers like SGD, Adam, RMSprop.
17. Save and reload trained models effectively.
18. Lab: Refine and enhance a neural network.

Deploying Deep Learning Models

19. Understand model deployment processes.
20. Implement model serving with TensorFlow Serving.
21. Lab: Launch a trained model to production.

Real-world Applications of Deep Learning

22. Investigate deep learning in various industries.
23. Explore its use in healthcare, finance, and more.