Deep Learning with Vision Systems (TTAI3020)

Category: AI, Data & Analytics | **Vendor:** Trivera Tech

Duration: 24.00 hours (3 days) **19.5 CPD Hours** **Rating:** ⭐ 4.6 (5,878 reviews)

Course Information

Delivery Format: Instructor Led - Online

Course Overview

Hands-On Computer Vision with Tensorflow®is a hands-on course that thoroughly explores TensorFlow, the brand-new version of Google's open source framework for machine learning. You will understand how to benefit from using convolutional neural networks (CNNs) for visual tasks.

About This Course

Computer Vision solutions are becoming increasingly common, making their way into fields such as health, automobile, social media, and robotics. Hands-On Computer Vision with Tensorflow is a hands-on course that thoroughly explores TensorFlow, the brand-new version of Google's open source framework for machine learning. You will understand how to benefit from using convolutional neural networks (CNNs) for visual tasks.

This course begins with the fundamentals of computer vision and deep learning, teaching you how to build a neural network from scratch. You will discover the features that have made TensorFlow the most widely used AI library, along with its intuitive Keras interface. You'll then move on to building, training, and deploying CNNs efficiently. Complete with concrete code examples, the course demonstrates how to classify images with modern solutions, such as Inception and ResNet, and extract specific content using You Only Look Once (YOLO), Mask R-CNN, and U-Net. You will also build generative adversarial networks (GANs) and variational autoencoders (VAEs) to create and edit images, and long short-term memory networks (LSTMs) to analyze videos. In the process, you will acquire advanced insights into transfer learning, data augmentation, domain adaptation, and mobile and web deployment, among other key concepts.

This ®"skills-centric® course is about 50% hands-on lab and 50% lecture, with extensive practical exercises designed to reinforce fundamental skills, concepts and best practices taught throughout the course. Working in a hands-on learning environment, led by our Computer Vision expert instructor, students will learn about and explore how to

-Build, train, and serve your own deep neural networks with TensorFlow 2 and Keras

-Apply modern solutions to a wide range of applications such as object detection and video analysis

-Run your models on mobile devices and web pages and improve their performance.

-Create your own neural networks from scratch

-Classify images with modern architectures including Inception and ResNet

-Detect and segment objects in images with YOLO, Mask R-CNN, and U-Net

-Tackle problems faced when developing self-driving cars and facial emotion recognition systems

-Boost your application's performance with transfer learning, GANs, and domain adaptation

-Use recurrent neural networks (RNNs) for video analysis

-Optimize and deploy your networks on mobile devices and in the browser

Who Should Attend

This course is geared for experienced data scientists, machine learning engineers, and AI researchers interested in understanding and developing algorithms for image recognition, object detection, and visual data analysis.

Prerequisites & Entry Requirements

General Prerequisites:

Pre-Requisites: Students should have

-Basic to Intermediate IT Skills. have some knowledge of Python.

-Good basic understanding of image representation (pixels, channels, etc.)

-Understanding of Matrix manipulation (shapes, products, etc.)

Learning Outcomes

Upon successful completion of this course, participants will be able to:

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Detailed Course Outline

Computer Vision and Neural Networks

Computer Vision and Neural Networks

Technical requirements

Computer vision in the wild

A brief history of computer vision

Getting started with neural networks

TensorFlow Basics and Training a Model

TensorFlow Basics and Training a Model

Technical requirements

Getting started with TensorFlow 2 and Keras

TensorFlow 2 and Keras in detail

The TensorFlow ecosystem

Modern Neural Networks

Modern Neural Networks

Technical requirements

Discovering convolutional neural networks

Refining the training process

Influential Classification Tools

Influential Classification Tools

Technical requirements

Understanding advanced CNN architectures

Leveraging transfer learning

Object Detection Models

Object Detection Models

Technical requirements

Introducing object detection

A fast object detection algorithm €œ YOLO

Faster R-CNN €œ a powerful object detection model

Enhancing and Segmenting Images

Enhancing and Segmenting Images

Technical requirements

Transforming images with encoders-decoders

Understanding semantic segmentation

Training on Complex and Scarce Datasets

Training on Complex and Scarce Datasets

Technical requirements

Efficient data serving

How to deal with data scarcity

Video and Recurrent Neural Networks

Video and Recurrent Neural Networks

Technical requirements

Introducing RNNs

Classifying videos

Optimizing Models and Deploying on Mobile Devices

Optimizing Models and Deploying on Mobile Devices

Technical requirements

Optimizing computational and disk footprints

On-device machine learning

Example app €œ recognizing facial expressions

Additional Course Details

Nexus Humans Deep Learning with Vision Systems (TTAI3020) training program is a workshop that presents an invigorating mix of sessions, lessons, and masterclasses meticulously crafted to propel your learning expedition forward.

This immersive bootcamp-style experience boasts interactive lectures, hands-on labs, and collaborative hackathons, all strategically designed to fortify fundamental concepts.

Guided by seasoned coaches, each session offers priceless insights and practical skills crucial for honing your expertise. Whether you're stepping into the realm of professional skills or a seasoned professional, this comprehensive course ensures you're equipped with the knowledge and prowess necessary for success.

While we feel this is the best course for the Deep Learning with Vision Systems (TTAI3020) course and one of our Top 10 we encourage you to read the course outline to make sure it is the right content for you.

Additionally, private sessions, closed classes or dedicated events are available both live online and at our training centres in Dublin and London, as well as at your offices anywhere in the UK, Ireland or across EMEA.

Frequently Asked Questions

Q: What delivery options are available for Deep Learning with Vision Systems (TTAI3020)?

We offer multiple delivery formats:

- Live Instructor-Led Classroom Online (Virtual/Live Online)
- Traditional Instructor-Led Classroom Training (ILT)
- On-site delivery at your offices anywhere in United Kingdom
- Private dedicated courses customized for your team

Q: How many CPD hours does this course provide?

The 3-day Deep Learning with Vision Systems (TTAI3020) course provides up to 19.5 CPD hours of structured learning. CPD certificates can be provided upon request.

Q: What is the duration of the Deep Learning with Vision Systems (TTAI3020) training?

The training takes place over 3 day(s), with each day lasting approximately 24.00 hours including breaks for lunch and refreshments.

Q: Do you provide corporate training for Deep Learning with Vision Systems (TTAI3020)?

Yes, we provide corporate training, dedicated training, and closed classes for Deep Learning with Vision Systems (TTAI3020). Training can take place anywhere in United Kingdom including London, Manchester, Birmingham, Edinburgh, or live online allowing teams from across United Kingdom or internationally to attend.

Q: What related terms do people search for?

Popular related searches include: AI; Machine Learning; Vision Systems

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Q: Why choose Nexus Human for Deep Learning with Vision Systems (TTAI3020)?

Nexus Human is recognized as one of the leading training providers. Our trainers have won multiple awards including:

- Small Firms Best Trainer Award
- National Training Partner of the Year (Ireland) - Multiple Years
- Global Top 30 Instructor Awards (2012, 2019, 2021)
- Tech Excellence Award Nominations
- Learning Performance Institute (LPI) External Training Provider Sponsor 2024

Q: Are there any discount codes available?

Yes! Use discount code **PENPAL5** when booking your Deep Learning with Vision Systems (TTAI3020) training. Please note that only one discount code can be used per booking and cannot be combined with other special offers.

Nexus Human

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