Postgraduate Certificate

Object Detection in Computer Vision

tech *global university*

Postgraduate Certificate
Object Detection in Computer Vision

- » Modality: **online**
- » Duration: **6 weeks**
- » Certificate: **TECH Global University**
- » Credits: **6 ECTS**
- » Schedule: **at your own pace**
- » Exams: **online**

Website: **www.techtitute.com/us/information-technology/postgraduate-certificate/object-detection-computer-vision**

Index

01
Introduction

A basic and fundamental task of computer vision is object detection. It makes it possible to identify shapes and elements, process them and extract valuable information from them. However, this is not a simple field, since it is necessary to master all its particularities in order to extract the maximum potential from the machine that has been designed and programmed. For this reason, this program prepares professionals to integrate the most complete and innovative knowledge of object detection into their computer vision projects, so that they can develop all kinds of successful initiatives in this technological field based on effective object detection.

Object detection is a basic task in computer vision, but not an easy one: this course prepares you to successfully incorporate all the secrets of this technique to your professional projects"

When designing and programming a computer vision machine, it is essential to handle a series of tools and basic tasks so that the device works correctly and according to the established objectives. One of the most essential is object detection, which allows the machine to identify elements, analyze and classify them. Therefore, something that may not seem so complex can actually be a fundamental element in the field of computer vision.

This Postgraduate Certificate in Object Detection in Computer Vision provides the professional with the latest knowledge and tools in this field, delving into issues such as occlusions, object detection evaluation metrics, motion detection, particle filters, object tracking, the computing platform or the choice of framework to be used in the project, among others.

In addition, this program is carried out following an innovative, 100% online teaching methodology, that will allow the student to balance their studies with their professional career without any problems. It will also have numerous multimedia educational contents such as practical exercises, visual explanations on video, master classes or interactive summaries, among others.

This **Postgraduate Certificate in Object Detection in Computer Vision** contains the most complete and up-to-date program on the market. Its most important features are:

- The development of case studies presented by experts in Deep Learning, computer science and computer vision

- The graphic, schematic, and practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional practice

- Practical exercises where the self-assessment process can be carried out to improve learning

- Its special emphasis on innovative methodologies

- Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments

- Content that is accessible from any fixed or portable device with an Internet connection

Specialize in object detection and develop interesting computer vision projects thanks to this program"

" *Artificial intelligence is the future: learn more about the particularities of object detection and progress professionally in the field of computer vision"*

TECH's innovative 100% online teaching methodology will allow you to combine your professional career with your studies.

Achieve the professional progress you are looking for in the field of computer vision thanks to this Postgraduate Certificate.

The program's teaching staff includes professionals from the sector who contribute their work experience to this educational program, as well as renowned specialists from leading societies and prestigious universities.

The multimedia content, developed with the latest educational technology, will provide the professional with situated and contextual learning, i.e., a simulated environment that will provide immersive education programmed to learn in real situations.

This program is designed around Problem-Based Learning, whereby the professional must try to solve the different professional practice situations that arise during the academic year. For this purpose, the student will be assisted by an innovative interactive video system created by renowned and experienced experts.
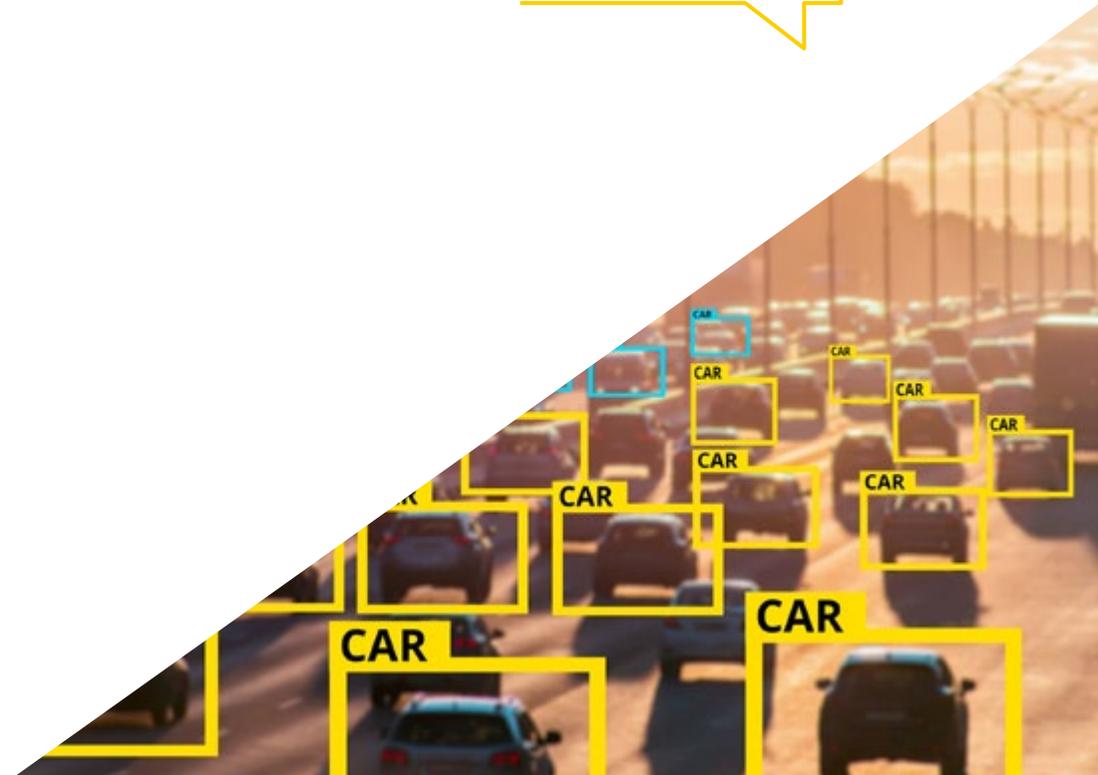
02
Objectives

The main objective of the Postgraduate Certificate in Object Detection in Computer Vision is to offer the professional the latest developments and techniques in the area of computer vision. To this end, it offers a high-level teaching staff, specialized and innovative contents in object detection and an online teaching methodology that adapts to your circumstances, allowing you to study in the place and time you want.

"*Delve into the object detection in computer vision and become essential in your company*"

General Objectives

- Generate specialized knowledge about object detection neural networks and their metrics
- Identify the different architectures
- Establish use cases
- Examine tracking algorithms and their metrics

Numerous computer vision projects are waiting for you: enroll now!"

Specific Objectives

- Analyze how object detection networks work
- Examine traditional methods
- Determine evaluation metrics
- Identify the main datasets used in the marketplace
- Propose architectures of the Two Stage Object Detector type
- Analyze Fine Tuning Methods
- Examine different Single Shoot architectures
- Establish object tracking algorithms
- Apply detection and tracking of people

03
Course Management

This Postgraduate Certificate in Object Detection in Computer Vision has a highly specialized and very experienced faculty in this area, and will transfer all the latest knowledge in object detection in computer vision projects to the student. Therefore, at the end of this educational program, the student will be in a position to work in all kinds of initiatives within the field of artificial intelligence.

"

You will have at your disposal the best experts in computer vision target detection. Enroll and check it out"

Management

Mr. Redondo Cabanillas, Sergio

- Head of Bcnvision's R&D Department
- Project and development manager at Bcnvision
- Machine vision applications engineer at Bcnvision
- Technical Engineering in Telecommunications. Specialization in Image and Sound at the Polytechnic University of Catalonia
- Graduate in Telecommunications. Specialization in Image and Sound by the Polytechnic University of Catalonia
- Lecturer in Cognex vision training for Bcnvision customers
- Teacher in internal courses at Bcnvision to the technical department on vision and advanced development in c#

Professors

Mr. Delgado Gonzalo, Guillem

- Computer Vision and Artificial Intelligence Researcher at Vicomtech
- Computer Vision and Artificial Intelligence Engineer at Gestoos
- Graduate in Audiovisual Systems Engineering at Polytechnic University of Catalunya
- MSc in Computer Vision at Universitat Autónoma de Barcelona

Leading professionals in the field have come together to offer you the most comprehensive knowledge in this field, so that you can develop with total guarantees of success"

04

Structure and Content

This Postgraduate Certificate in Object Detection in Computer Vision is structured in 1 specialized module, through which the student will be able to delve into the accuracy of object detection, methods such as sliding window, evaluation metrics, the Viola detection method, particle filters, detection and tracking of people or re-identification, among many other issues.
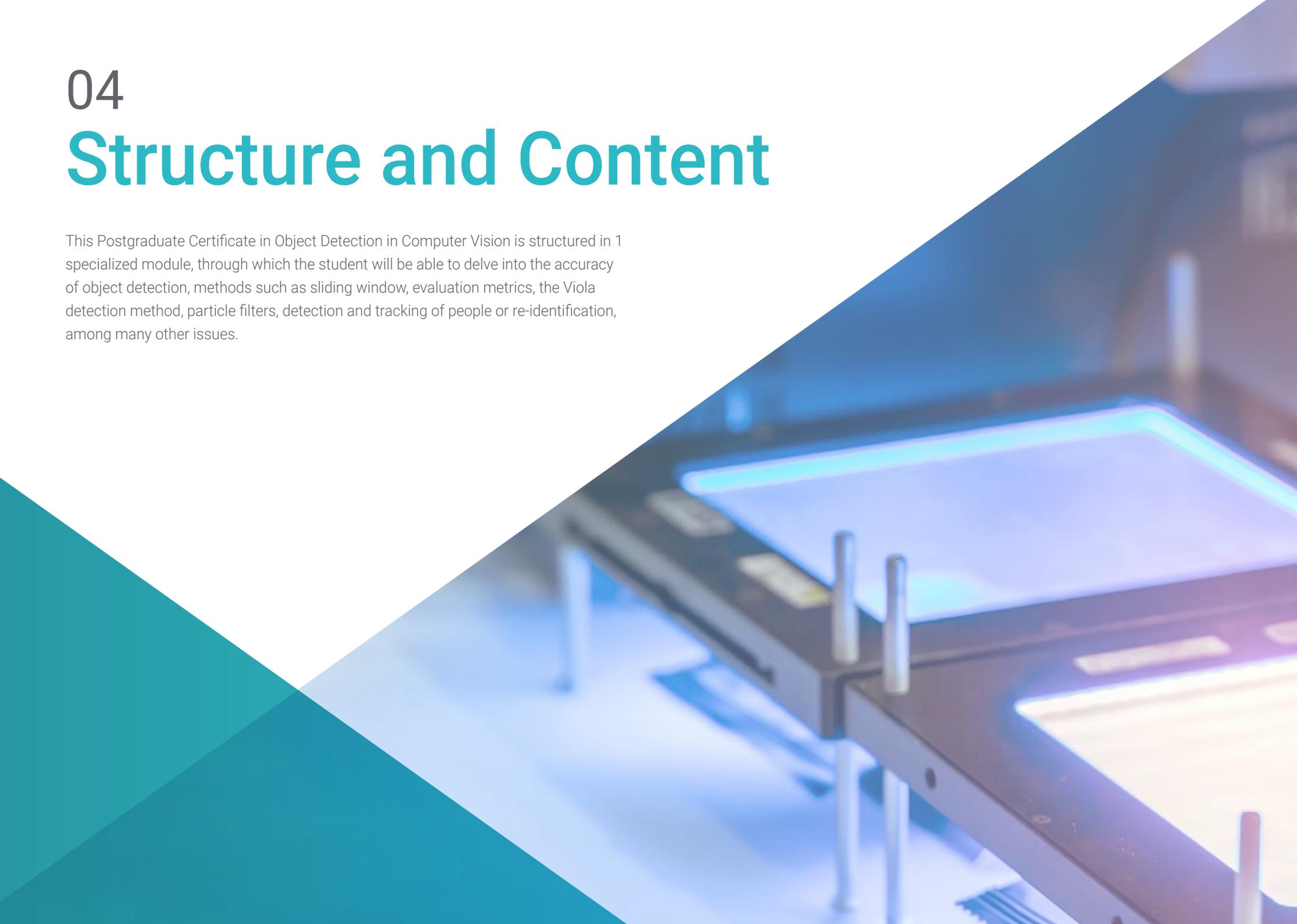
"
The most in-depth and cutting-edge content in object detection is here"

Module 1. Object Detection

05

Methodology

This academic program offers students a different way of learning. Our methodology uses a cyclical learning approach: **Relearning.**

This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the **New England Journal of Medicine** have considered it to be one of the most effective.

"
Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"

Case Study to contextualize all content

Our program offers a revolutionary approach to developing skills and knowledge. Our goal is to strengthen skills in a changing, competitive, and highly demanding environment.

"
At TECH, you will experience a learning methodology that is shaking the foundations of traditional universities around the world"

You will have access to a learning system based on repetition, with natural and progressive teaching throughout the entire syllabus.

A learning method that is different and innovative

This TECH program is an intensive educational program, created from scratch, which presents the most demanding challenges and decisions in this field, both nationally and internationally. This methodology promotes personal and professional growth, representing a significant step towards success. The case method, a technique that lays the foundation for this content, ensures that the most current economic, social and professional reality is taken into account.

❝

Our program prepares you to face new challenges in uncertain environments and achieve success in your career"

The case method has been the most widely used learning system among the world's leading Information Technology schools for as long as they have existed. The case method was developed in 1912 so that law students would not only learn the law based on theoretical content. It consisted of presenting students with real-life, complex situations for them to make informed decisions and value judgments on how to resolve them. In 1924, Harvard adopted it as a standard teaching method.

What should a professional do in a given situation? This is the question that you are presented with in the case method, an action-oriented learning method. Throughout the course, students will be presented with multiple real cases. They will have to combine all their knowledge and research, and argue and defend their ideas and decisions.

The student will learn to solve complex situations in real business environments through collaborative activities and real cases.

Relearning Methodology

TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines different teaching elements in each lesson.

We enhance the Case Study with the best 100% online teaching method: Relearning.

In 2019, we obtained the best learning results of all online universities in the world.

At TECH you will learn using a cutting-edge methodology designed to train the executives of the future. This method, at the forefront of international teaching, is called Relearning.

Our university is the only one in the world authorized to employ this successful method. In 2019, we managed to improve our students' overall satisfaction levels (teaching quality, quality of materials, course structure, objectives...) based on the best online university indicators.

01 learning from evidence

02 relearning from evidence

03 testing

04 learning from an expert

05 neurocognitive context dependent learning

06 Von-Restorff effect

07 case based learning through storytelling

08 competencies testing (retesting)

In our program, learning is not a linear process, but rather a spiral (learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically. This methodology has trained more than 650,000 university graduates with unprecedented success in fields as diverse as biochemistry, genetics, surgery, international law, management skills, sports science, philosophy, law, engineering, journalism, history, and financial markets and instruments. All this in a highly demanding environment, where the students have a strong socio-economic profile and an average age of 43.5 years.

Relearning will allow you to learn with less effort and better performance, involving you more in your training, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation for success.

From the latest scientific evidence in the field of neuroscience, not only do we know how to organize information, ideas, images and memories, but we know that the place and context where we have learned something is fundamental for us to be able to remember it and store it in the hippocampus, to retain it in our long-term memory.

In this way, and in what is called neurocognitive context-dependent e-learning, the different elements in our program are connected to the context where the individual carries out their professional activity.

This program offers the best educational material, prepared with professionals in mind:

Study Material

All teaching material is produced by the specialists who teach the course, specifically for the course, so that the teaching content is highly specific and precise.

These contents are then applied to the audiovisual format, to create the TECH online working method. All this, with the latest techniques that offer high quality pieces in each and every one of the materials that are made available to the student.

Classes

There is scientific evidence suggesting that observing third-party experts can be useful.

Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

Practising Skills and Abilities

They will carry out activities to develop specific skills and abilities in each subject area. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop in the context of the globalization that we are experiencing.

Additional Reading

Recent articles, consensus documents and international guidelines, among others. In TECH's virtual library, students will have access to everything they need to complete their course.

30%

10%

8%

20%

25%

4%

3%

Case Studies

Students will complete a selection of the best case studies chosen specifically for this program. Cases that are presented, analyzed, and supervised by the best specialists in the world.

Interactive Summaries

The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".

Testing & Retesting

We periodically evaluate and re-evaluate students' knowledge throughout the program, through assessment and self-assessment activities and exercises, so that they can see how they are achieving their goals.

06
Certificate

The Postgraduate Certificate in Object Detection in Computer Vision guarantees students, in addition to the most rigorous and up-to-date education, access to a certificate issued by TECH Global University.

Successfully complete this program and receive your university qualification without having to travel or fill out laborious paperwork"

This program will allow you to obtain your **Postgraduate Certificate in Object Detection in Computer Vision** endorsed by **TECH Global University**, the world's largest online university.

TECH Global University is an official European University publicly recognized by the Government of Andorra (*official bulletin*). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Certificate in Object Detection in Computer Vision**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**

tech global university

Mr./Ms. _____, with identification document _____ has successfully passed and obtained the title of:

Postgraduate Certificate in Object Detection in Computer Vision

This is a program of 180 hours of duration equivalent to 6 ECTS, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH Global University is a university officially recognized by the Government of Andorra on the 31st of January of 2024, which belongs to the European Higher Education Area (EHEA).

In Andorra la Vella, on the 28th of February of 2024

Dr. Pedro Navarro Illana
Rector

Unique TECH Code: AFWORD23S   techtitute.com/certificates

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