Postgraduate Certificate
3D Digital Image Processing in Computer Vision

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Postgraduate Certificate
3D Digital Image Processing 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/3d-digital-image-processing-computer-vision**

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01
Introduction

The digital processing of 3D images is a basic task in the field of computer vision. It allows this type of optical information to be properly processed, so that a computer vision machine or device can analyze and classify it in an appropriate and systematic way. For this reason, this program is perfect for computer scientists and engineers who wish to delve deeper into this complex process, taking into account the latest advances in this booming field.

Master the latest techniques in the digital processing of 3D images thanks to this Postgraduate Certificate"

Within computer vision, there are a number of fields of great importance without which it would not be possible to obtain the results expected from a device of these characteristics. One of them is the digital processing of 3D images. 3D images are the basic element of analysis in the real world, differing greatly from machine vision analysis of two-dimensional images.

For this reason, the professionals in this field need the most up-to-date knowledge and tools, so that they can respond to the current challenges of the discipline. Therefore, this Postgraduate Certificate in 3D Image Processing in Computer Vision delves into issues such as metrology software, data visualization, web visualization, 3D geometric shapes or *bin picking,* among others.

This program follows an innovative 100% online teaching system based on practical exercises and adapted to the personal and professional circumstances of each student. In addition, an expert faculty will guide the student through numerous multimedia resources such as video demonstrations, master classes and multimedia summaries.

This **Postgraduate Certificate in 3D Digital Image Processing in Computer Vision** contains the most complete and up-to-date educational program on the market. The most important features include:

- The development of case studies presented by experts in 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 self-assessment can be used 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 the digital processing of 3D images applied to computer vision with this Postgraduate Certificate, which puts at your fingertips all the advances in this field"

Computer vision is undergoing continuous advances, and this program offers you the most recent innovations in digital 3D image processing.

" *Incorporate the latest developments in 3D digital image processing applied to computer vision into your work, and get the professional update you are looking for"*

TECH Global University's teaching methodology allows you to balance your professional life with your studies, without interruptions. Enroll now.
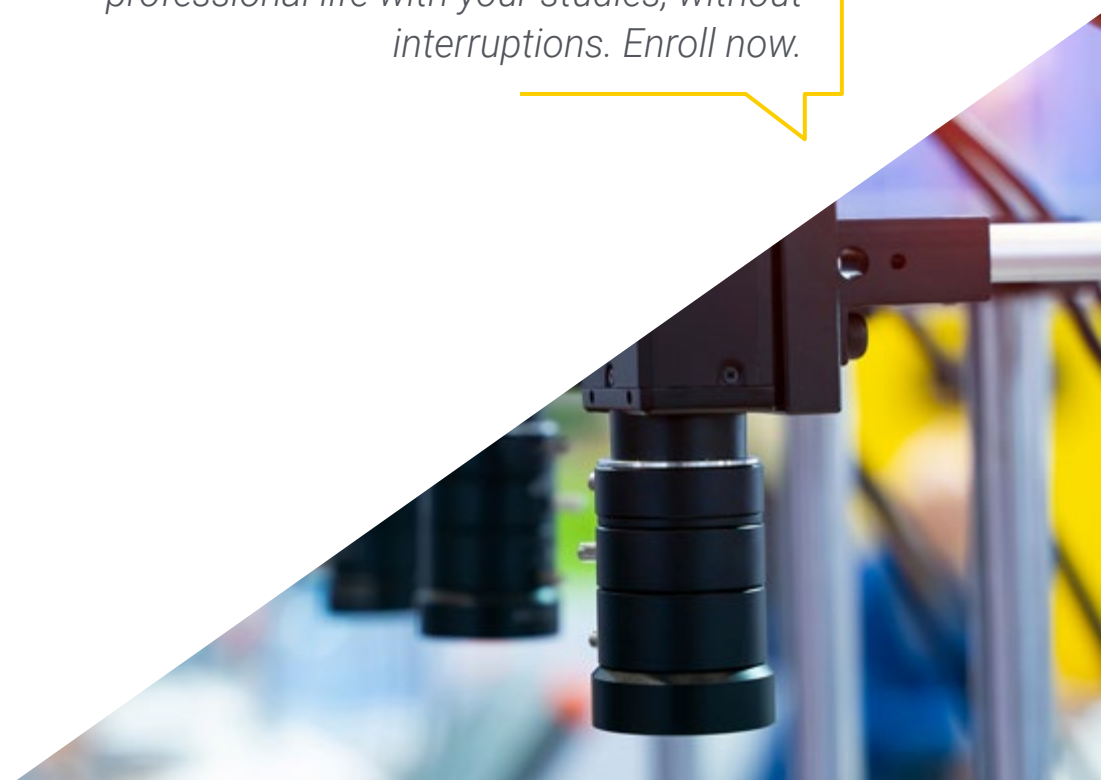
The program's teaching staff includes professionals from the sector who contribute their work experience to this educational program, as well as renowned specialists from leading societies and prestigious universities.

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 objective of this Postgraduate Certificate in 3D Image Processing in Computer Vision is to provide professionals with the most useful and innovative tools in this field, so that they can work according to the latest advances in a discipline that continues to evolve. As a result, the students will be in a position to obtain a great improvement in their careers, since at the end of the program they will have become a true specialist in the digital processing of this type of images.

Access the best learning in computer vision thanks to this specialized program"

General Objectives

- Determine how a 3D image is formed and its characteristics
- Introducing the open 3D library
- Analyze the advantages and difficulties of working in 3D instead of 2D
- Establish methods for the processing of 3D images

Machine vision is a growing discipline: don't miss this opportunity to learn more about 3D digital image processing"

Specific Objectives

◆ Examine a 3D image

◆ Analyze the software used for 3D data processing

◆ Learn about open3D

◆ Determine the relevant data in a 3D image

◆ Demonstrate visualization tools

◆ Establish denoising filters

◆ Propose geometric calculation tools

◆ Analyze object detection methodologies

◆ Evaluate triangulation and scene reconstruction methods

03
Course Management

The teachers that form the faculty of this Postgraduate Certificate in 3D Image Processing in Computer Vision are active professionals who possess extensive knowledge of this field of artificial intelligence, and who will transfer all their practical knowledge to the students. This way, students will be provided with the latest tools, taken directly from the work practice of the teachers, and will be able to use them immediately in their own work.

The greatest specialists in computer vision and 3D digital image processing are at your disposal. Learn with them and get the professional improvement you are looking for"

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

Ms. García Moll, Clara

- Computer Vision Engineer. Satellogic
- Full Stack Developer. Catfons
- Audiovisual Systems Engineering. Pompeu Fabra University (Barcelona)
- Master's Degree in Computer Vision. Autonomous University of Barcelona
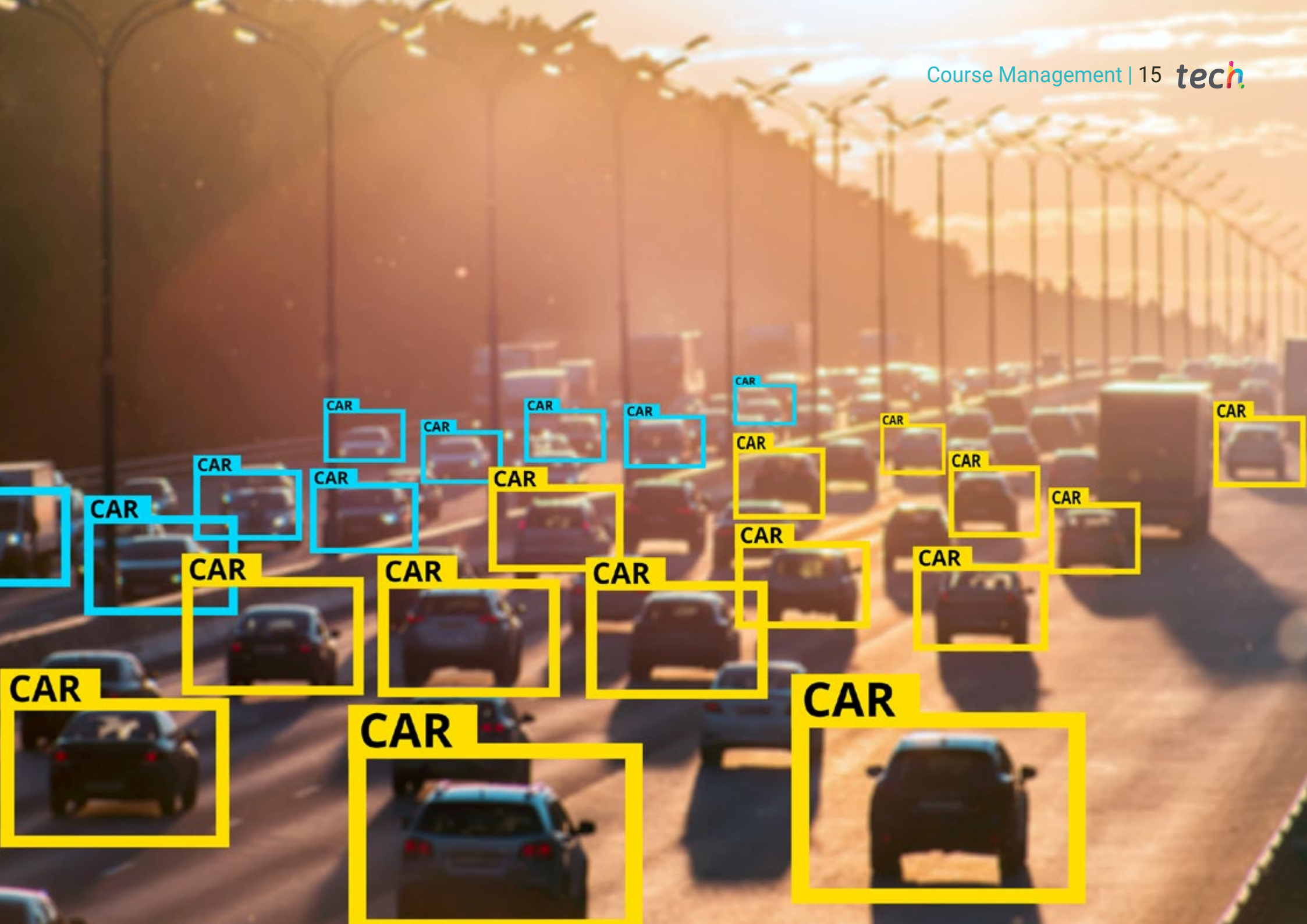
04

Structure and Content

This Postgraduate Certificate in 3D Image Processing in Computer Vision is structured in 1 module that will delve into the latest developments in image processing and visualization software, the library for 3D data processing, metrology, depth maps in 2D images, Pointclouds, geometry and feature extraction, geometric distances or triangulation, among many others.

Delve into 3D geometric shapes applied to computer vision with this comprehensive content"

Module 1. 3D Image Processing

There is no better syllabus in 3D digital image processing applied to computer vision on the market"

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 goalt 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 3D Digital Image Processing in Computer Vision guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate 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 3D Digital Image Processing 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.
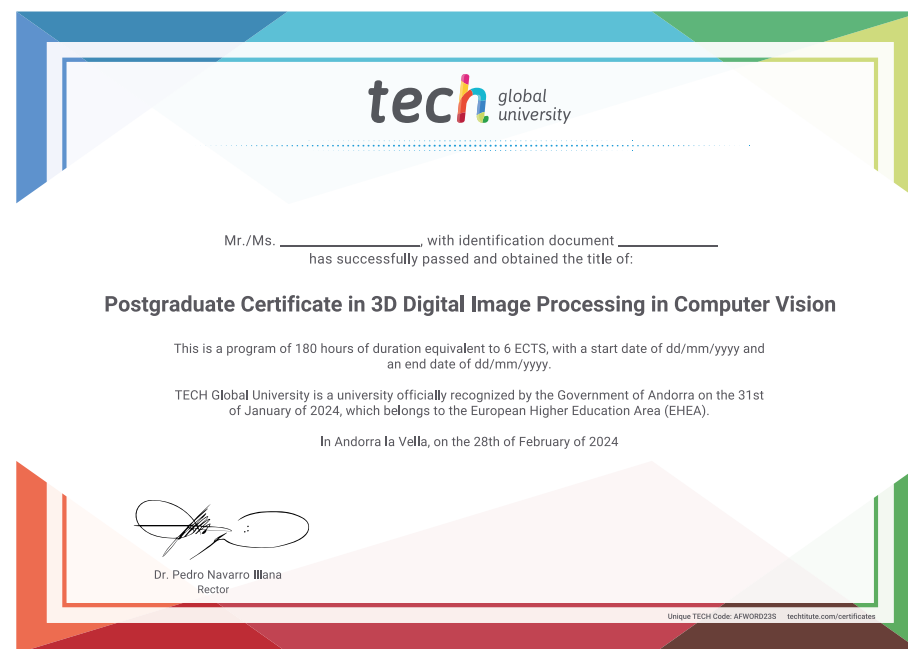
This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Certificate in 3D Digital Image Processing in Computer Vision**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**

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

Postgraduate Certificate in 3D Digital Image Processing 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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