Postgraduate Diploma
Advanced Web-Based Computer Vision Techniques

tech *technological university*

Postgraduate Diploma
Advanced Web-Based Computer Vision Techniques

» Modality: **online**
» Duration: **6 months**
» Certificate: **TECH Technological University**
» Dedication: **16h/week**
» Schedule: **at your own pace**
» Exams: **online**

Website: **www.techtitute.com/pk/artificial-intelligence/postgraduate-diploma/postgraduate-diploma-advanced-web-based-computer-vision-techniques**
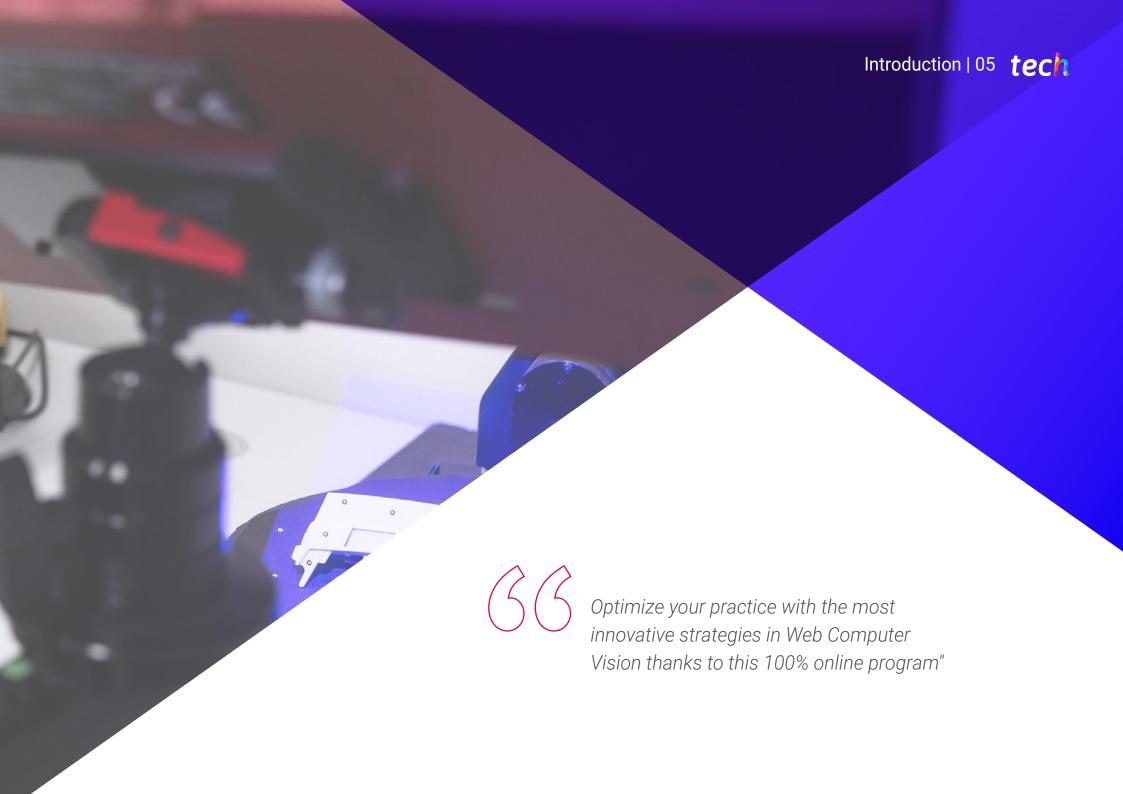
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01

Introduction

A recent survey conducted by a prestigious technology consulting firm reveals the concern of workers about losing their jobs in the face of the advance of Artificial Intelligence. Although companies attach great importance to emerging technologies, new professional profiles are emerging that combine both sides. An example of this is the field of Web Computer Vision. In this area machines and humans complement each other to ensure the accuracy, quality and relevance of the data obtained. In order for professionals to take advantage of these job opportunities, TECH is launching a university program that will provide the most revolutionary procedures for 3D image processing and segmentation. Also, it the program is taught in a 100% online format.

Optimize your practice with the most innovative strategies in Web Computer Vision thanks to this 100% online program"
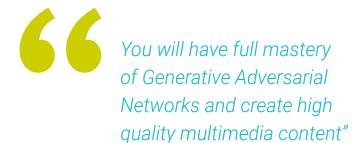
Image segmentation with Deep Learning has led to significant advances in fields such as robotics, medicine or security. The main reason is that these systems make it possible to automate complex tasks and analyze large volumes of data in a short period of time. Therefore, experts gain a better understanding thanks to accurate images of the objects of interest. However, in order to enjoy its multiple benefits, it is essential that professionals acquire new skills and incorporate the latest advances in this area into their usual procedures.

For this reason, TECH implements a Postgraduate Diploma that will delve into Advanced Web Computer Vision Techniques. Designed by experts in this field, the curriculum will delve into 3D image processing, using the most innovative software for the visualization of materials. The syllabus will also focus on photo segmentation methods using Deep Learning Moreover, students will examine in detail the Semantic Segmentation Project to develop systems that require an accurate understanding of digital images. It should be noted that the academic itinerary will include the analysis of real case studies and exercises aimed at raising students' competencies.

Regarding the methodology of the program, it is taught 100% online. In this sense, the only thing students will need is an electronic device with Internet access to enter the Virtual Campus and enjoy the most dynamic didactic content. In addition, TECH uses an innovative pedagogical system:Relearning. This consists of repeating the key contents in a natural way, so that students can learn progressively. Undoubtedly, this is an excellent opportunity for professionals to get a complete update through a university program that adapts to the real needs of experts.

This **Postgraduate Diploma in Advanced Web-Based Computer Vision Techniques** contains the most complete and up-to-date 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 it is conceived scientific and practical information on those 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

You will have full mastery of Generative Adversarial Networks and create high quality multimedia content"

You will be highly qualified to handle the various segmentation tools using different frameworks.

" *You will access the most effective databases to solve general segmentation problems and evaluate algorithms effectively"*

The Relearning system will lead you to advance in a much more agile way through image segmentation with Deep Learning.
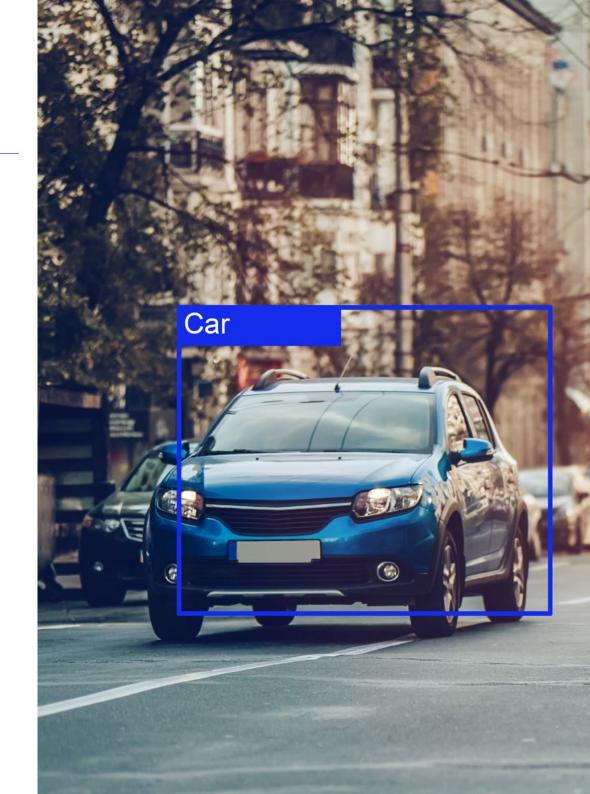
The program's teaching staff includes professionals from the industry who contribute their work experience to this program, as well as renowned specialists from leading societies and prestigious universities.

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 students will be assisted by an innovative interactive video system created by renowned and experienced experts.

02
Objectives

Through 450 hours of learning, this Postgraduate Diploma will transfer to the graduates the most innovative procedures in Computer Vision. In this way, they will enrich their professional practice with the most advanced tools for 3D Image Processing. In addition, they will be characterized by having a deep knowledge of how Deep Learning works. This will enable them to analyze large volumes of data and perform complex tasks automatically. They will also acquire advanced practical skills, which will allow them to correctly handle the main snapshot visualization software.

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"This program will allow you to learn through virtual learning systems, so that you can carry out your tasks with total guarantee of success"

General Objectives

- Analyze semantic segmentation neural networks and their metrics
- Identify the most common architectures
- Establish Use Cases
- Apply correct cost function for learning
- Analyze public data sources (Datasets)
- Examine different labeling tools
- Develop the main phases of a segmentation-based project
- 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

"

An educational experience that will make you a complete specialist in web-based computer vision. And in only 450 hours!"

Specific Objectives

Module 1. 3D Image Processing

- Examine a 3D image
- Analyze the software used for 3D data processing
- Developing 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

Module 2. Image Segmentation with *Deep Learning*

- Analyze how semantic segmentation networks work
- Evaluate traditional methods
- Examine evaluation metrics and different architectures
- Examine video domains and cloud points
- Apply theoretical concepts through various examples

Module 3. Advanced Image Segmentation and Advanced Computer Vision Techniques

- Generate specialized knowledge on the handling of tools
- Examine Semantic Segmentation in medicine
- Identify the structure of a segmentation project
- Analyze Autoencoders
- Develop Adversarial Generative Networks

03
Course Management

To keep intact the educational excellence that characterizes its university programs, TECH has brought together a high teaching staff level. These professionals are specialized in Advanced Web-Based Computer Vision Techniques, also accumulating an extensive career in this area. In their commitment to providing quality services, these specialists remain at the technological forefront of this field of specialization. Thanks to this, students who complete this program will have at their disposal the most innovative tools to incorporate into their work practice. So you will experience a great leap of quality in your profession.

"

You will always have the support of a teaching staff made up of experts in Advanced Web-Based Computer Vision Techniques"

Management

Mr. Redondo Cabanillas, Sergio

- Machine Vision Research and Development Specialist at BCN Vision
- Development and *Backoffice* Team Leader at BCN Vision
- Project Manager and development of computer vision solutions
- Sound Technician at Media Arts Studio
- Specialization in Image and Sound by the Polytechnic University of Catalonia
- Graduate in Political Science and Industry from the Autonomous University of Barcelona
- Higher Level Training Cycle in Sound Villar CP

Professors

Ms. García Moll, Clara

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

Mr. Olivo García, Alejandro

- Vision Application Engineer at Bcnvision
- Degree in Industrial Technologies Engineering from the School of Industrial Engineering Polytechnic University of Cartagena
- Master's Degree in Industrial Engineering by the School of Industrial
- Engineering of the Polytechnic University of Cartagena
- Research Chair Scholarship from MTorres company
- Programming in C# .NET in Computer Vision Applications

Mr. González González, Diego Pedro

- Software Architect for Artificial Intelligence based systems
- Deep Learning and Machine Learning Application Developer
- Software architect for embedded systems for railway safety applications
- Linux driver developer
- Systems engineer for railway track equipment
- Embedded Systems Engineer
- Deep Learning Engineer
- Official Master's Degree in Artificial Intelligence from the International University of La Rioja (Spain)
- Industrial Engineer by Miguel Hernández University

Take the opportunity to learn about the latest advances in this field in order to apply it to your daily practice"

04
Structure and Content

This Postgraduate Diploma will provide students with a holistic approach to Advanced Web-Based Computer Vision Techniques Through 3 specialized modules, students will delve into the most effective 3D image processing software. In tune with this, the curriculum will delve into various semantic segmentation techniques applying Deep Learning. This will allow graduates to obtain a detailed and accurate understanding of the contents of an image. In addition, the curriculum will offer a wide range of libraries for 3D Data Processing, which will facilitate data processing and manipulation.

Looking to increase your decision-making confidence? Get it by updating your knowledge through this revolutionary university program"

Module 1. 3D Image Processing

Module 2. Image Segmentation with *Deep Learning*

Module 3. Advanced Image Segmentation and Advanced Computer Vision Techniques

You will have access to a collection of multimedia materials in multiple audiovisual formats that will strengthen your learning with dynamism"

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.

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

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.

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 Diploma in Advanced Web-Based Computer Vision Techniques guarantees students, in addition to the most rigorous and up-to-date education, access to a qualification issued by TECH Technological University.

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

This **Postgraduate Diploma in Advanced Web-Based Computer Vision Techniques** contains the most complete and up-to-date program on the market.

After the student has passed the assessments, they will receive their corresponding **Postgraduate Diploma** issued by **TECH Technological University** via tracked delivery*.

The certificate issued by **TECH Technological University** will reflect the qualification obtained in the Postgraduate Diploma, and meets the requirements commonly demanded by labor exchanges, competitive examinations, and professional career evaluation committees.

Title: **Postgraduate Diploma in Advanced Web-Based Computer Vision Techniques**
Official Nº of Hours: **450 h.**

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Awards the following
CERTIFICATE
to
Mr./Ms. _____, with identification number _____.
For having passed and accredited the following program

POSTGRADUATE DIPLOMA
in
Advanced Web-Based Computer Vision Techniques

This is a qualification awarded by this University, equivalent to 450 hours, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH is a Private Institution of Higher Education recognized by the Ministry of Public Education as of June 28, 2018.

June 17, 2020

Tere Guevara Navarro
Dean

Unique TECH Code: AFWORD23S   techtitute.com/certificates

*Apostille Convention. In the event that the student wishes to have their paper certificate issued with an apostille, TECH EDUCATION will make the necessary arrangements to obtain it, at an additional cost.

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