

# Postgraduate Certificate Parallel and Distributed Computing Applications

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    mirror_mod.use_y = True  
    mirror_mod.use_z = False  
elif _operation == "MIRROR"  
    mirror_mod.use_x = False  
    mirror_mod.use_y = False  
    mirror_mod.use_z = True
```



## Postgraduate Certificate Parallel and Distributed Computing Applications

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

Website: [www.techtute.com/us/information-technology/postgraduate-certificate/parallel-distributed-computing-applications](http://www.techtute.com/us/information-technology/postgraduate-certificate/parallel-distributed-computing-applications)

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# 01

# Introduction

Both Parallel and Distributed Computing have myriad computing applications in all kinds of environments. From areas such as meteorology and medicine to *Blockchain* or *Big Data*, it is remarkable the increasingly exponential use of this kind of systems. This is why the computer scientist who has a broad knowledge of all possible applications of this advanced computing will be able to position themselves at an advantage to lead projects related to it. This Postgraduate Certificate develops in the student a high capacity to know the techniques and methods of implementation of numerous successful cases, being able to take them to their own field and daily work. All of this in a completely online format, allowing you to combine your degree with other professional or personal responsibilities.





*Learn in depth the most successful methods to implement distributed and parallel systems in your most ambitious IT projects"*

In both high-end enterprise and government environments at all levels, Parallel and Distributed Computing systems have revolutionized the way data is handled and the speed with which operations are managed. In both hardware and software, advances are so many and so fast that it is difficult for the computer scientist to keep up with them all.

This Postgraduate Certificate was created with the premise of bringing together, in 10 topics, the main deployments of parallel and distributed architectures in recent years, as well as the numerous uses that have been given to them in sectors such as aviation or climate control. In this way, the computer scientist will learn about the most important advances in this area and understand the multitude of possible uses for them. This will result in a more enriching experience for the student, improving their possibilities of leading large-scale IT projects.

The format of the program is 100% online, which means that both face-to-face classes and fixed schedules have been eliminated. The computer scientist can download the entire syllabus from the first day, being able to choose the ideal time and place to study it, adapting it to their own pace and not the other way around.

The **Postgraduate Certificate in Applications of Parallel and Distributed Computing** contains the most complete and up-to-date scientific program on the market. The most important features include:

- ◆ The development of case studies presented by experts in Parallel and Distributed Computing
- ◆ The graphic, schematic, and eminently practical contents with which they are created, provide 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 for experts and individual reflection work
- ◆ Access to content from any fixed or portable device with an Internet connection



*Enroll today in this Postgraduate Certificate and do not miss the opportunity to strengthen your skills in an IT field with a great future, requiring more and more qualified professionals"*



*Join the world's largest online academic institution, with technical staff and faculty committed to making you an expert in Parallel and Distributed Computing"*

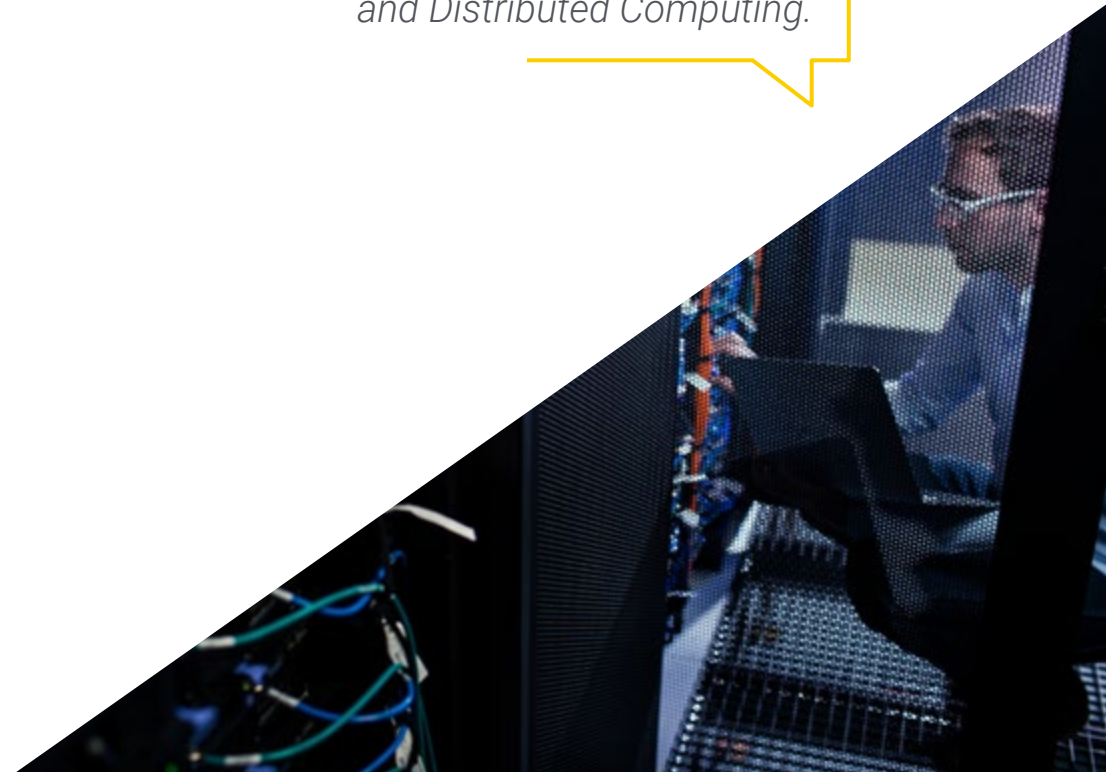
*Learn about the most important success stories in industries as diverse as medicine and aviation, with topics entirely dedicated to them.*

*Take a decisive step in your career by specializing in the multiple uses and applications of Parallel and Distributed Computing.*

The program's teaching staff includes professionals from sector who contribute their work experience to this training 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 training programmed to train 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

This Postgraduate Certificate has a very clear objective: to instruct the computer scientist in the multitude of current and even future uses of Parallel and Distributed Computing. In this way, and through numerous real case studies, the student will have the necessary knowledge and methodologies to face diverse projects and improve their own salary and labor perspective.







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*You will acquire a much broader and focused vision of Parallel and Distributed Computing, knowing how it is applied in the most prestigious environments”*



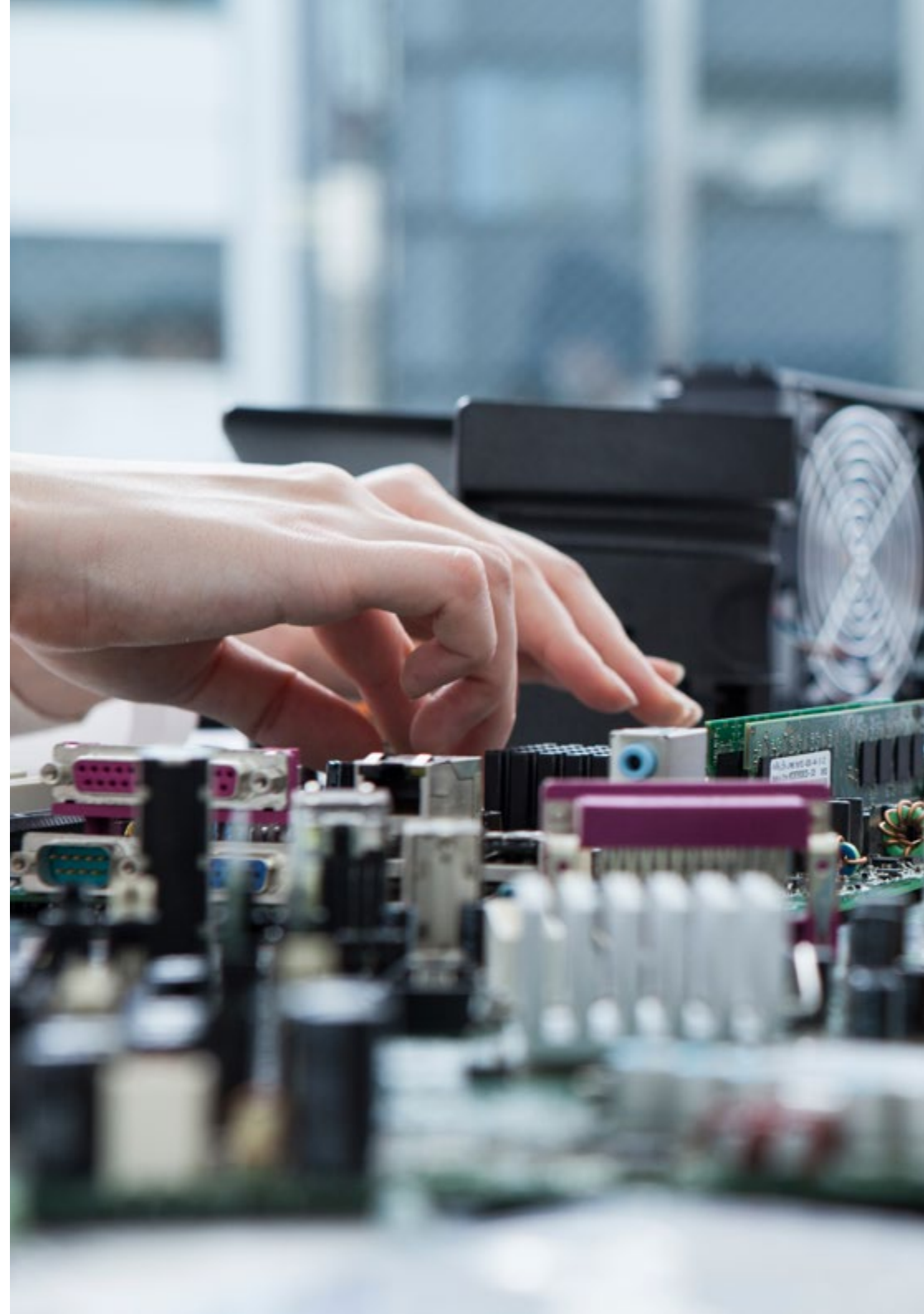
## General Objectives

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- ◆ Demonstrate the great contribution of Parallel and Distributed Computing applications to our environment
- ◆ Determine the reference architectures in the market
- ◆ Evaluate the benefits of these use cases
- ◆ Present successful solutions in the market



*You will achieve your most ambitious professional goals thanks to the meticulous contents of this Diploma"*





## Specific Objectives

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- ◆ Demonstrate why it is important for assessing climate change
- ◆ Determine the current importance of GPUs
- ◆ Present the impact of this technology on power grids
- ◆ Explore distributed engines to serve our customers
- ◆ Learn about the benefits of distributed engines to bring benefits to our companies
- ◆ Present examples of in-memory databases and their importance
- ◆ Examine how these models help Medicine

# 03

# Course Management

For the realization of this Postgraduate Certificate TECH has resorted to a teaching team with extensive experience in the techniques and implementation of parallel and distributed systems. In this way, the teaching staff brings together the most advanced technological theory with their own personal expertise, creating a much more practical syllabus for the student. In addition, the variety of content also ensures that the Diploma itself can be tailored to the ambitions of IT professionals with all kinds of career goals.





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*It draws on the experience of the entire teaching staff, built up over many years of working on large and responsible projects”*

## Management



### Mr. Olalla Bonal, Martín

- ◆ Technical Sales Blockchain Specialist in IBM
- ◆ Blockchain Hyperledger and Ethereum Architecture Manager at Blocknitive
- ◆ Director of the Blockchain area at PSS Information Technologies.
- ◆ Chief Information Officer in ePETID – Global Animal Health
- ◆ IT Infrastructure Architect at Bankia - wdoIT (IBM - Bankia Join Venture)
- ◆ Project Director and Manager in Daynet Servicios Integrales
- ◆ Director of Technology at Wiron Construcciones Modulares
- ◆ Head of IT Department at Dayfisa
- ◆ Head of IT Department at Dell Computer, Majsa and Hippo Viajes
- ◆ Electronics Technician in IPFP Juan de la Cierva



# 04

## Structure and Content

In order to guarantee a more efficient and comprehensive study work for the student, TECH has incorporated the *Relearning* pedagogical methodology throughout all the contents of this program. This implies that the computer scientist will improve their understanding of Parallel and Distributed Computing Applications in a natural and progressive way, thus resulting in an effective alleviation of the program's teaching load.







“

*Dig into the extensive in-depth videos, interactive summaries and supplemental readings provided for all topics covered”*

## Module 1. Parallel and Distributed Computing Applications

- 1.1. Parallel and Distributed Computing in Today's Applications
  - 1.1.1. *Hardware*
  - 1.1.2. *Software*
  - 1.1.3. The Importance of Timing
- 1.2. Climate Change
  - 1.2.1. Climate Applications Data Sources
  - 1.2.2. Climate Applications Data Volume
  - 1.2.3. Climate Applications Real Time
- 1.3. GPU Parallel Computing
  - 1.3.1. GPU Parallel Computing
  - 1.3.2. GPUs vs. CPU Use of GPU
  - 1.3.3. GPU Examples:
- 1.4. *Smart Grid* Computing in Electrical Networks
  - 1.4.1. *Smart Grid*
  - 1.4.2. Conceptual Models Examples
  - 1.4.3. *Smart Grid* Example
- 1.5. Distributed Motor Elasticsearch
  - 1.5.1. Distributed Motor Elasticsearch
  - 1.5.2. Architecture with Elasticsearch Examples
  - 1.5.3. Distributed Motor Case Uses
- 1.6. *Big Data Framework*
  - 1.6.1. *Big Data Framework*
  - 1.6.2. Architecture of Advanced Tools
  - 1.6.3. *Big Data* in Distributed Computing
- 1.7. In-memory Database
  - 1.7.1. In-memory Database
  - 1.7.2. Redis solution Success Story
  - 1.7.3. Deployment of In-Memory Database Solutions
- 1.8. *Blockchain*
  - 1.8.1. *Blockchain* Architecture Components
  - 1.8.2. Collaboration between Nodes and Consensus
  - 1.8.3. *Blockchain* Solutions Implementations



- 1.9. Distributed Systems in Medicine
  - 1.9.1. Architecture Components
  - 1.9.2. Distributed Systems in Medicine Operation
  - 1.9.3. Distributed Systems in Medicine Applications
- 1.10. Distributed Systems in the Aviation Sector
  - 1.10.1. Design in Architecture
  - 1.10.2. Distributed Systems in the Aviation Sector. Functionality of the Components
  - 1.10.3. Distributed Systems in the Aviation Sector. Applications

“ Access a virtual classroom available 24 hours a day, with all the content you need to learn about the most effective and in-demand applications of Parallel and Distributed Computing”

# 05 Methodology

This training program offers a different way of learning. Our methodology uses a cyclical learning approach: ***Re-learning***.

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.





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*Discover Re-learning, 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"*

## At TECH we use the Case Method

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

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



*We are the first online university to combine Harvard Business School case studies with a 100% online learning system based on repetition.*



### A learning method that is different and innovative.

This intensive Information Technology program at TECH Global University prepares you to face all the challenges in this field, both nationally and internationally. We are committed to promoting your personal and professional growth, the best way to strive for success, that is why at TECH Global University you will use Harvard *case studies*, with which we have a strategic agreement that allows us, to offer you material from the best university in the world.

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

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

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.

## Re-learning Methodology

Our university is the first in the world to combine Harvard University case studies with a 100%-online learning system based on repetition, which combines different teaching elements in each lesson.

We enhance Harvard case studies with the best 100% online teaching method: Re-learning.

*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 Re-learning.

Our university is the only university 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.





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.

*Re-learning 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 competencies and skills in each thematic area. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop in the context of the globalization we live in.



### 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.





#### Case Studies

They will complete a selection of the best case studies in the field used at Harvard. Cases that are presented, analyzed, and supervised by the best senior management 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 multimedia content presentation training Exclusive system 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 your goals.



# 06 Certificate

The Postgraduate Certificate in Parallel and Distributed Computing Applications guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Global University.



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*Successfully complete this training program and receive your diploma without travel or laborious paperwork"*

This program will allow you to obtain your **Postgraduate Certificate in Parallel and Distributed Computing Applications** 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 Parallel and Distributed Computing Applications**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**



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

future  
health confidence people  
education information tutors  
guarantee accreditation teaching  
institutions technology learning  
community commitment  
personalized service innovation  
knowledge present  
development language  
classroom



## Postgraduate Certificate Parallel and Distributed Computing Applications

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

# Postgraduate Certificate Parallel and Distributed Computing Applications

