Postgraduate Certificate

Parallel Computing Applied to Cloud Environments

tech technological university

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Postgraduate Certificate

Parallel Computing Applied to Cloud Environments

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

Website: www.techtitute.com/us/information-technology/postgraduate-certificate/parallel-computing-applied-cloud-environments

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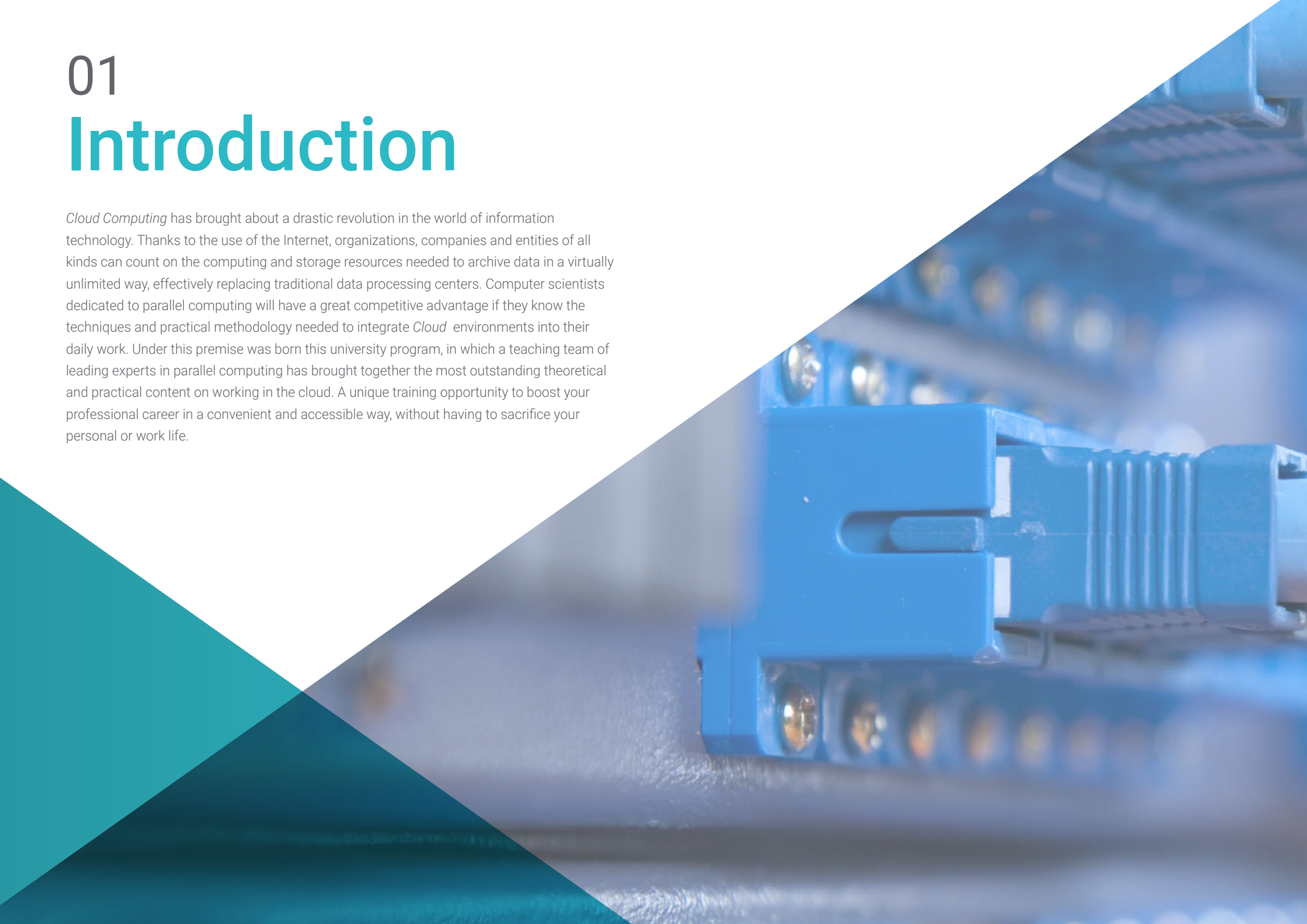
01

Introduction

Cloud Computing has brought about a drastic revolution in the world of information technology. Thanks to the use of the Internet, organizations, companies and entities of all kinds can count on the computing and storage resources needed to archive data in a virtually unlimited way, effectively replacing traditional data processing centers. Computer scientists dedicated to parallel computing will have a great competitive advantage if they know the techniques and practical methodology needed to integrate *Cloud* environments into their daily work. Under this premise was born this university program, in which a teaching team of leading experts in parallel computing has brought together the most outstanding theoretical and practical content on working in the cloud. A unique training opportunity to boost your professional career in a convenient and accessible way, without having to sacrifice your personal or work life.



Hone your skills in managing and administering Cloud environments, delving into the latest security, storage and cloud services"

High-capacity computing systems take significant advantage of the benefits of *cloud*environments. Scalability, availability, agility and provisioning speed are just some of the key aspects that make cloud technology especially important when it comes to advanced parallel architectures.

Therefore, the computer scientist who works assiduously in parallel computing systems can benefit greatly, knowing how to apply their work in *Cloud* environments. Therefore, this program comprehensively develops the fundamental keys to working in the cloud, with topics entirely dedicated to Cloud *Networking*, storage, security, *Cloud-Native* development and high-performance computing.

All this helps the IT professional to become an expert in this area, amply demonstrating his ability to take on larger and more prestigious parallel computing projects. In addition, the format of the degree is 100% online, which means that there are no face-to-face classes or fixed schedules. All content is available for download, and the student decides how to distribute the course load.

This **Postgraduate Certificate in Parallel Computing Applied to Cloud Environments**is the most comprehensive and up-to-date educational 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 self-assessment can be used to improve learning.
- Its special emphasis on innovative methodologies
- Theoretical lessons, questions for experts and individual reflection work
- Content that is accessible from any fixed or portable device with an Internet connection

You will be able to download the entire syllabus from the first day of the degree, with the virtual classroom available 24 hours a day"

Develop your knowledge in software-defined virtual networks, cloud monitoring and management, cloud computing and high-performance clustering"

Join the world's largest online academic institution, with the cutting-edge educational technology you need to make the ultimate career leap.

Do not miss the opportunity to specialize in an IT area with a great future projection, accompanied by the best possible teaching team.

The program's teaching staff includes professionals from the 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

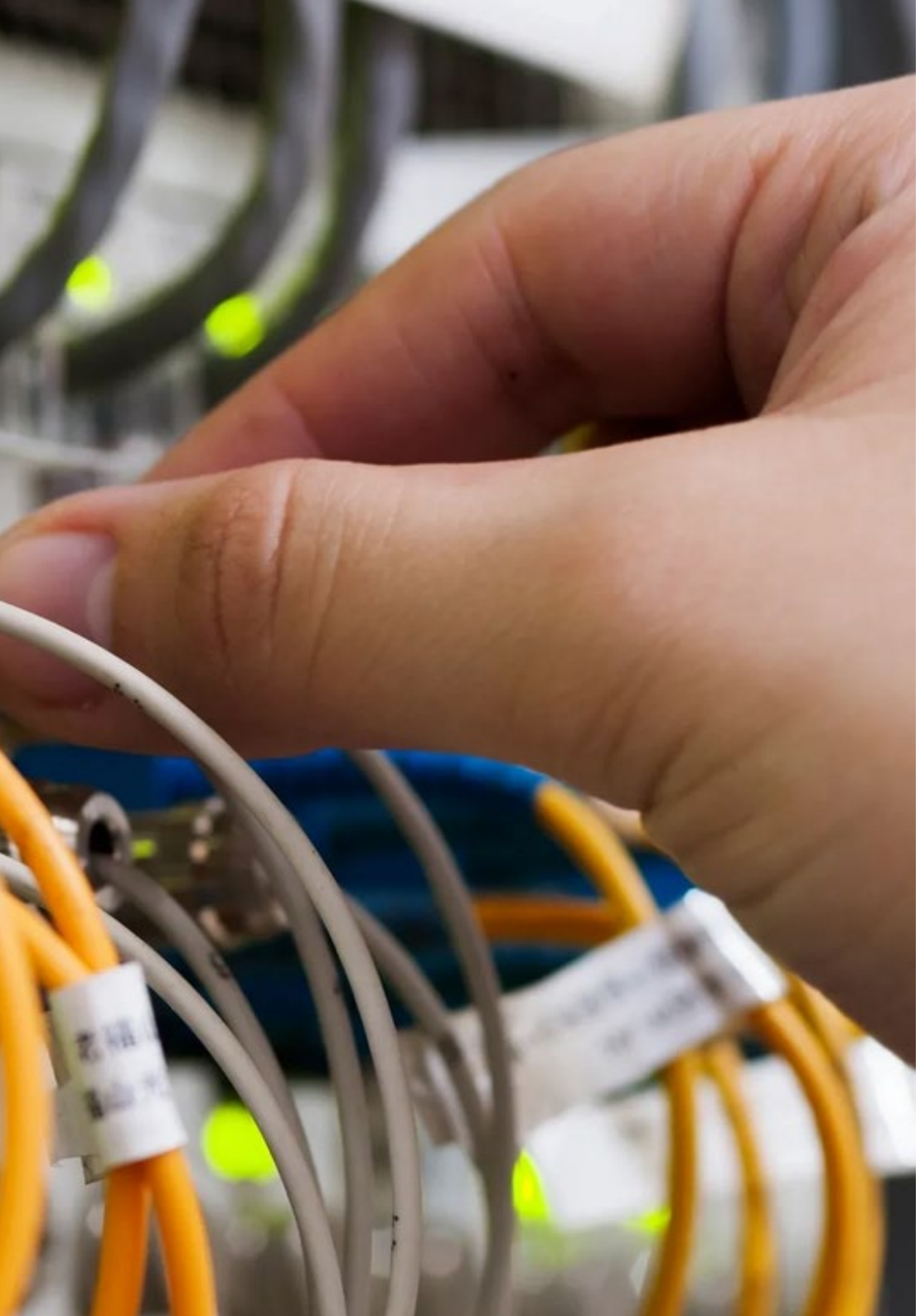
Both TECH and the teaching team of this Postgraduate Certificate know how important a deep and developed knowledge of how the cloud works in parallel computing systems can be. Therefore, they have created this program so that the computer scientist can access exhaustive information on the exact techniques of parallel computing, applied in *Cloud* environments, thus obtaining a privileged position.

TECH's objectives and yours are aligned. You will have the best possible support to accomplish your most ambitious goals"

General Objectives

- Develop the Cloud Computing Paradigm
- Identify the different approaches based on the degree of automation and service
- Analyze the main parts of a cloud architecture
- Establish the differences with an *On-Premise* Architecture

You will incorporate analysis and management techniques in the cloud into your daily work, which will be very useful for solving common parallel computing problems"



Specific Objectives

- Analyze the different *Cloud* Deployment options: *Multi-Cloud, Hybrid Cloud*
- Deepen in the benefits inherent to Cloud Computing
- Develop the principles of Cloud Computing Economics: moving from CAPEX to OPEX
- Evaluate the commercial offerings of the different *Cloud*Providers
- Assess Cloud Supercomputing Capabilities
- Examining Cloud Computing Security

03

Course Management

This Postgraduate Certificate has a highly qualified teaching team in parallel computing, with extensive work in the integration of *Cloud* technology in such environments. Thus, the entire syllabus gains a necessary practical approach, in which the student will not only gain access to the latest technological developments, but also to the most effective techniques for programming in parallel computing established in cloud environments.

Take advantage of the practical knowledge of the entire teaching team and learn the best methodology to develop Cloud environments in Parallel Computing"

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

Professors

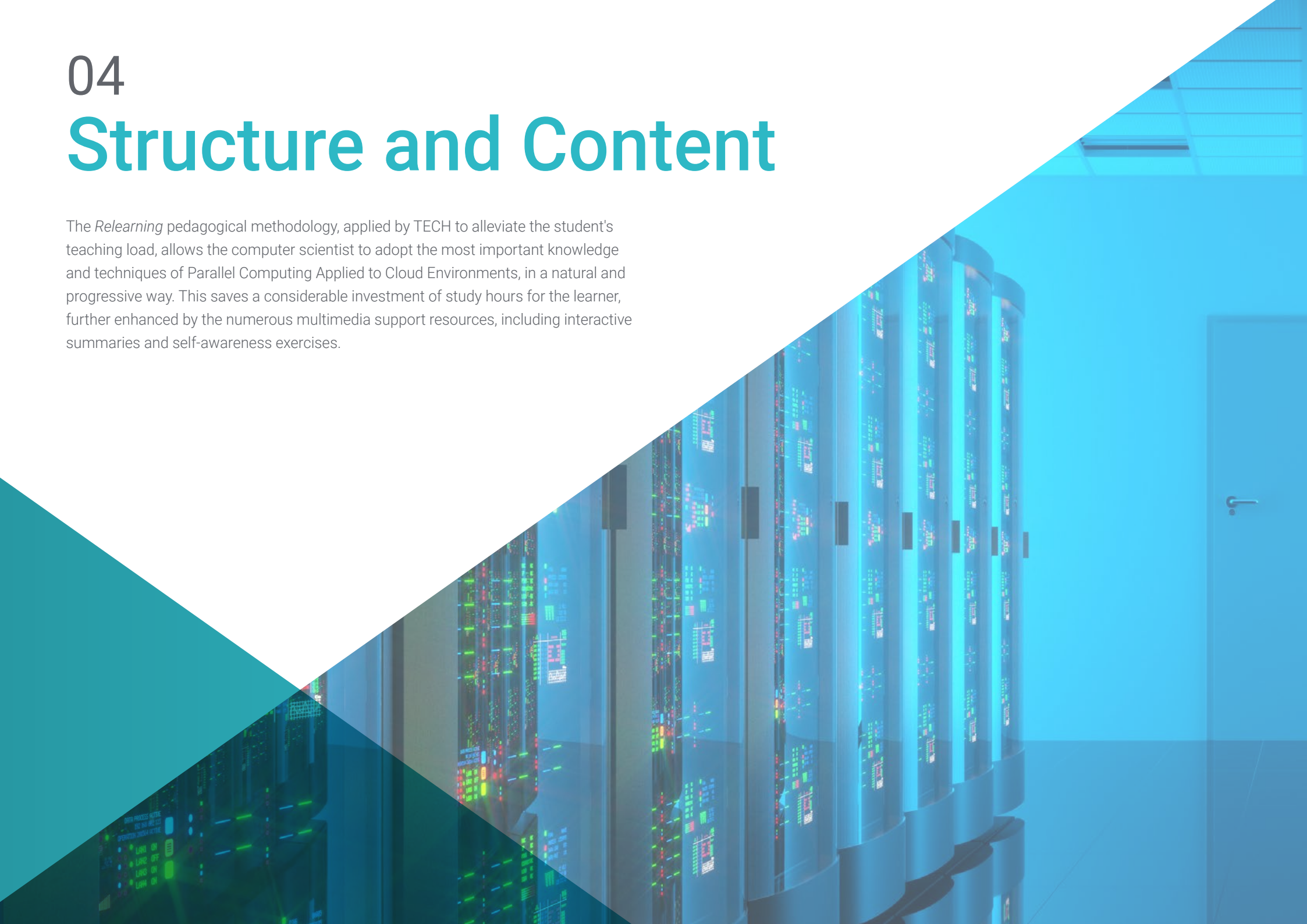
Mr. Gómez Gómez, Borja

- Business Development Manager at Oracle
- Head of Blockchain and Pre-Sales Architecture Solutions at Paradigma Digital
- Senior IT Architect at Atmira
- SOA Architect and TCP SI Consultant
- Analyst and Consultant at Everis
- Degree in Computer Engineering from the Complutense University of Madrid
- Master's Degree in Science Computer Engineering at the Complutense University of Madrid

04

Structure and Content

The *Relearning* pedagogical methodology, applied by TECH to alleviate the student's teaching load, allows the computer scientist to adopt the most important knowledge and techniques of Parallel Computing Applied to Cloud Environments, in a natural and progressive way. This saves a considerable investment of study hours for the learner, further enhanced by the numerous multimedia support resources, including interactive summaries and self-awareness exercises.



You will refine your understanding of Parallel Computing Applied to Cloud Environments, with various practical examples and simulated cases developed by the teachers themselves"

Module 1. Parallel Computing Applied to Cloud Environments

1.1. Computing in the Cloud
- 1.1.1. State of the Art of the IT Landscape
- 1.1.2. The "Cloud"
- 1.1.3. Computing in the Cloud

1.2. Security and Resilience in the Cloud
- 1.2.1. Regions, Availability and Failure Zones
- 1.2.2. *Tenant* or *Cloud*Account Management
- 1.2.3. Identity and Access Control in the Cloud

1.3. *Networking* in the Cloud
- 1.3.1. *Software*-Defined Virtual Networks
- 1.3.2. Components of a *Software*-Defined Network
- 1.3.3. Connexion with Other Systems

1.4. Services in the Cloud
- 1.4.1. Infrastructure as a Service
- 1.4.2. Platform as a Service
- 1.4.3. *Serverless* Computing
- 1.4.4. *Software* as a Service

1.5. Storage in the Cloud
- 1.5.1. Block Storage in the Cloud
- 1.5.2. File Storage in the Cloud
- 1.5.3. Storage of Objects in the Cloud

1.6. Interaction and Monitoring of the Cloud
- 1.6.1. Monitoring and Management of the Cloud
- 1.6.2. Interaction with the Cloud: Administration Console
- 1.6.3. Interaction with *Command Line Interface*
- 1.6.4. API-Based Interaction

1.7. *Cloud-Native* Development
  1.7.1. *Cloud-Native* Development
  1.7.2. Containers and Container Orchestration Platforms
  1.7.3. Continuous Cloud Integration
  1.7.4. Use of Events in the Cloud
1.8. Infrastructure as Code in the Cloud
  1.8.1. Management and Provisioning Automation in the Cloud
  1.8.2. Terraform
  1.8.3. Integration with *Scripting*
1.9. Creation of a Hybrid Infrastructure
  1.9.1. Interconnection
  1.9.2. Interconnection with *Datacenter*
  1.9.3. Interconnection with Other Clouds
1.10. High Performance Computing
  1.10.1. High-Performance Computing
  1.10.2. Creation of a High-Performance Cluster
  1.10.3. Application of High-Performance Computing

Choose for yourself which subjects are most important to you, and you can even decide in which order to study them"

05

Methodology

This training program provides you with 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.***

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.

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.

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

A learning method that is different and innovative.

This intensive program in Computer Science at TECH Technological University prepares you to face all the challenges in this area, 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 Technological 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.

> *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 Computer 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

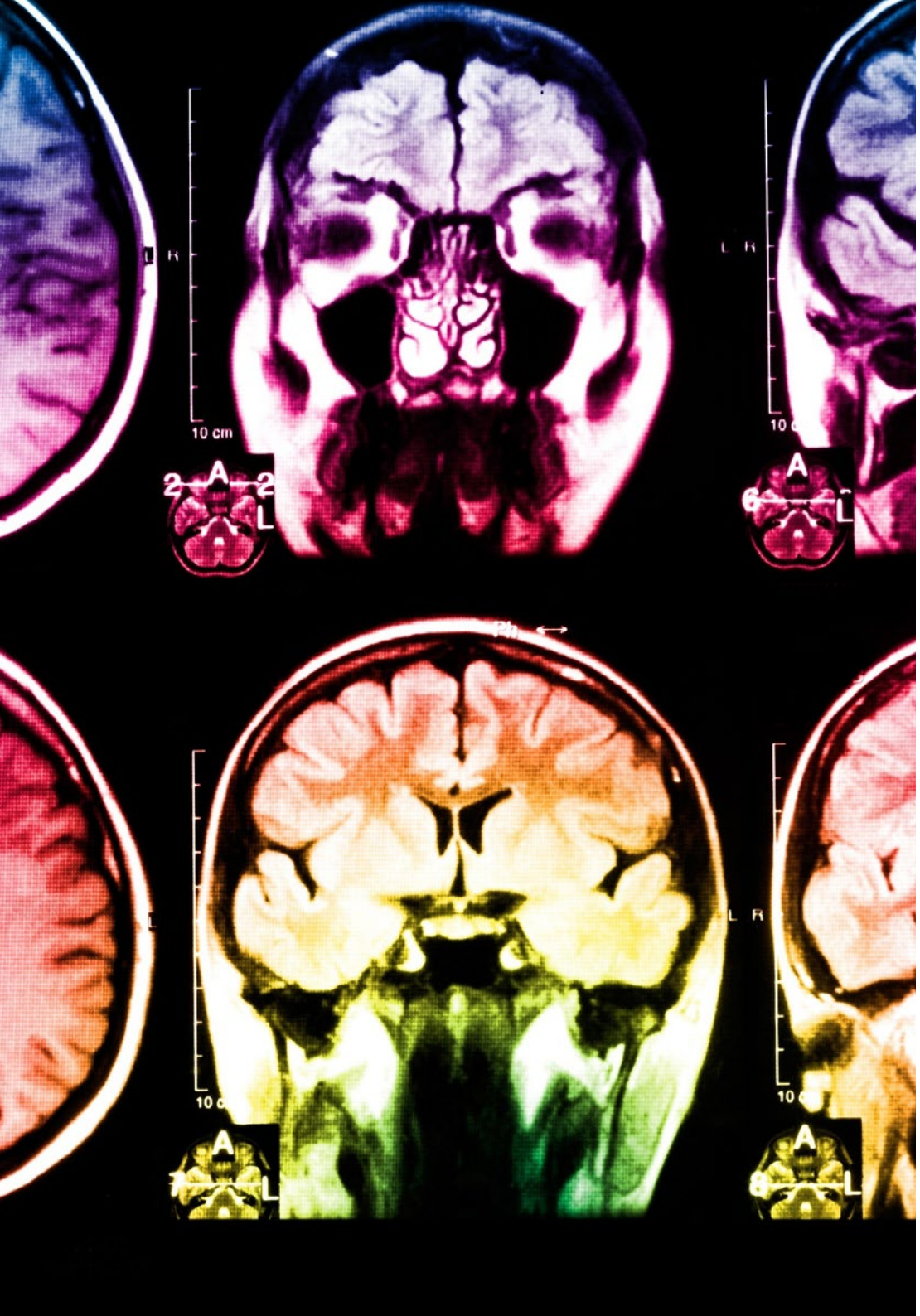
Our university is the first in the world to combine Harvard University *case studies* with a 100%-online learning system based on repetition, which combines different teaching elements in each lesson.

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

In 2019 we obtained the best learning results of all Spanish-language 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 Spanish-speaking university qualified 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 Spanish 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.

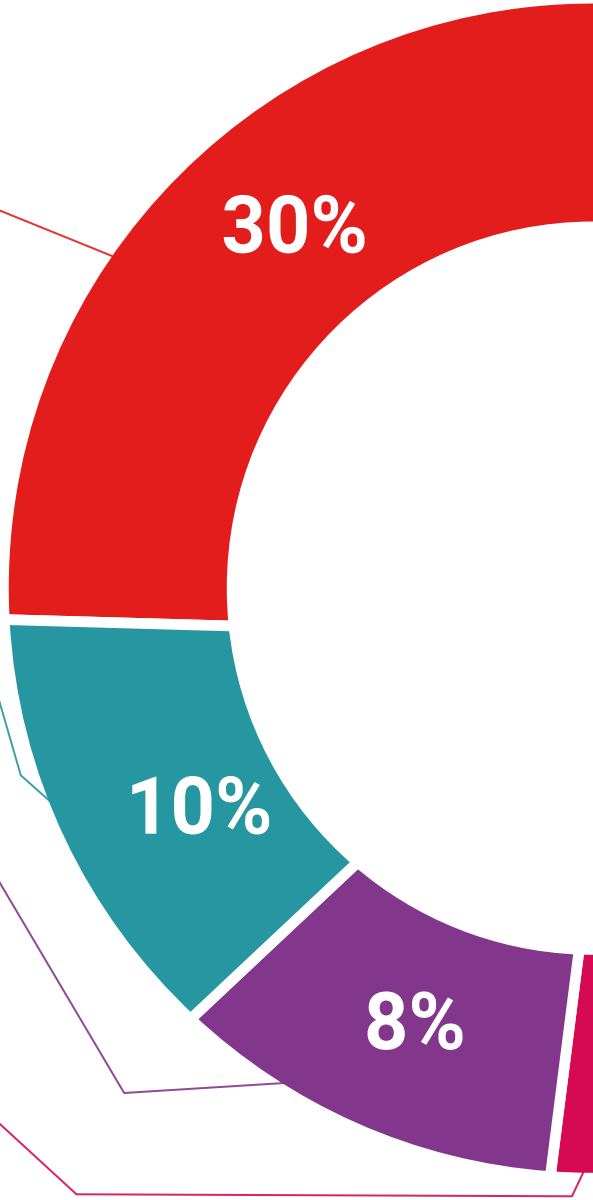
Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

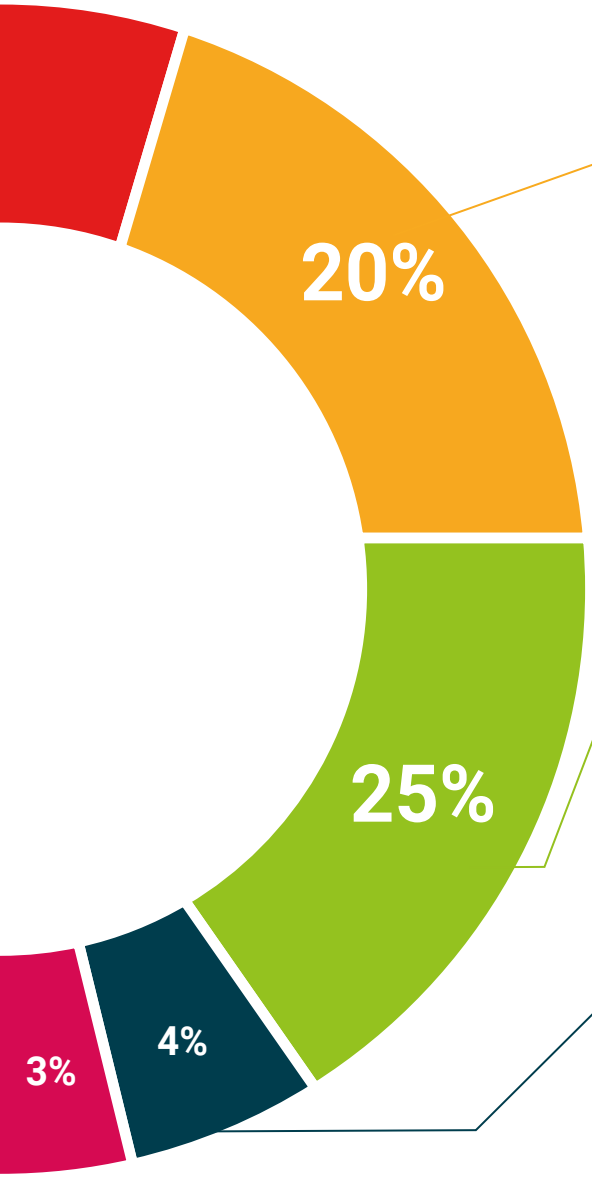
Practising Skills and Abilities

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 Latin America.

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 & Re-testing

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 Computing Applied to Cloud Environments, in addition to the most rigorous and up-to-date training, access to a Postgraduate Certificate issued by TECH Technological University.

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

This **Postgraduate Certificate in Parallel Computing Applied to Cloud Environments**is the most comprehensive and up-to-date program on the market.

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

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

Title: **Postgraduate Certificate in Parallel Computing Applied to Cloud Environments**

Official Number of Hours: **150 hours.**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Awards the following

DIPLOMA

to

Mr./Ms. _____, with identification number _____.

For having passed and accredited the following program

POSTGRADUATE CERTIFICATE

in

Parallel Computing Applied to Cloud Environments

This is a qualification awarded by this University, equivalent to 150 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 diploma issued with an apostille, TECH EDUCATION will make the necessary arrangements to obtain it, at an additional cost.

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