Postgraduate Certificate

Big Data and Artificial Intelligence

tech technological university

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Postgraduate Certificate
Big Data and Artificial Intelligence

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

Website: **www.techtitute.com/in/engineering/postgraduate-certificate/big-data-artificial-intelligence**

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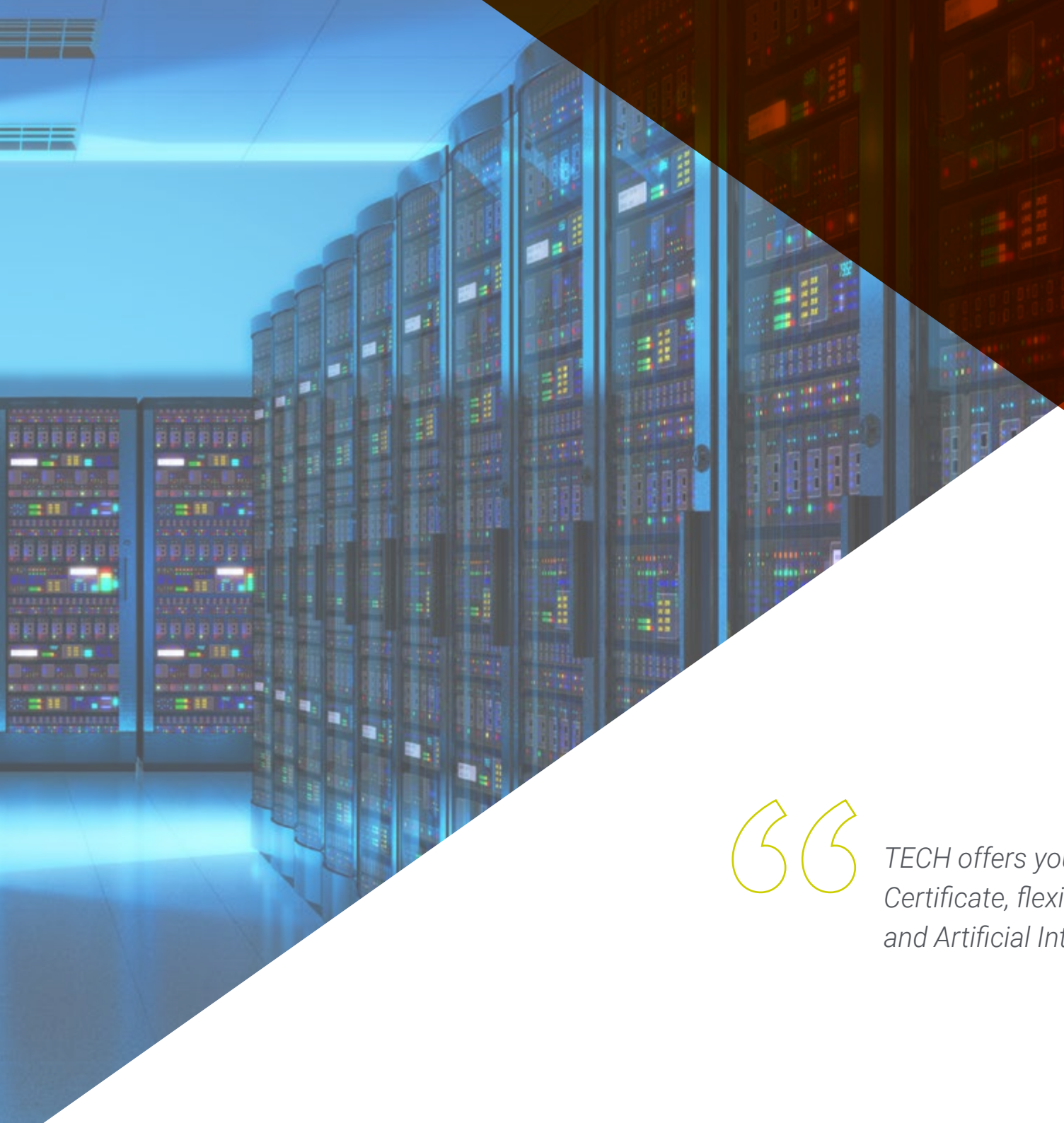
01

Introduction

In the field of engineering the perfect combination of Big Data and Artificial Intelligence technologies allows us to optimize industrial processes, improve product quality, detect equipment failures or provide greater security in the construction environment. Undoubtedly, these advances lead professionals to require continuous updating in these areas to drive their projects to the highest level. To promote this updating, TECH facilitates this 100% online program, which enables the graduate to achieve excellent learning about the various tools used for data collection and visualization, the fundamentals of machine learning and deep learning or the future of AI. All this, through a Syllabus accessible from any device Digital with an Internet connection.



TECH offers you a 100% online Postgraduate Certificate, flexible and advanced on Big Data and Artificial Intelligence"

The revolution of AI in all socioeconomic sectors has led engineering professionals to incorporate the important advances this technology provides in their projects. In this way, they obtain optimal results in product design, in simulations, in process automation or in robotics.

To this is added the use of the different tools of Big Data and its use for the improvement of planning and the reduction of transport costs or storage, among other issues. That way, this wide field of action has led TECH to create this Postgraduate Certificate in Big Data and Artificial Intelligence.

It is a 6-week program, which will take the graduate to delve into mining and data storage, its applications, machine learning and neural networks or creating a personality in AI. To further facilitate this teaching process, TECH provides innovative multimedia resources, case studies, specialized readings, which provide a theoretical-practical approach essential to progress in this technological field in vogue.

The engineer is then faced with an excellent opportunity to obtain an education that will lead them to progress in their sector. For this, this academic institution facilitates an online pedagogical methodology, flexible and convenient to study. In this way, the student will only need an electronic device with Internet connection to access at any time, the contents hosted on the virtual platform. Undoubtedly, an exceptional opportunity to make quality instruction compatible with the most demanding daily responsibilities.

This **Postgraduate Certificate in Big Data and Artificial Intelligence** 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 Digital Transformation and Industry 4.0
- The graphic, schematic, and practical contents with which they are created, provide practical information on the disciplines that are essential for professional practice
- Practical exercises where the process of 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

In just 6 weeks you will be updated on the most advanced techniques used in PLN"

Explore from the comfort of your home in data visualization tools like Tableau, D3, Matplotlib (Python) or Shiny®"

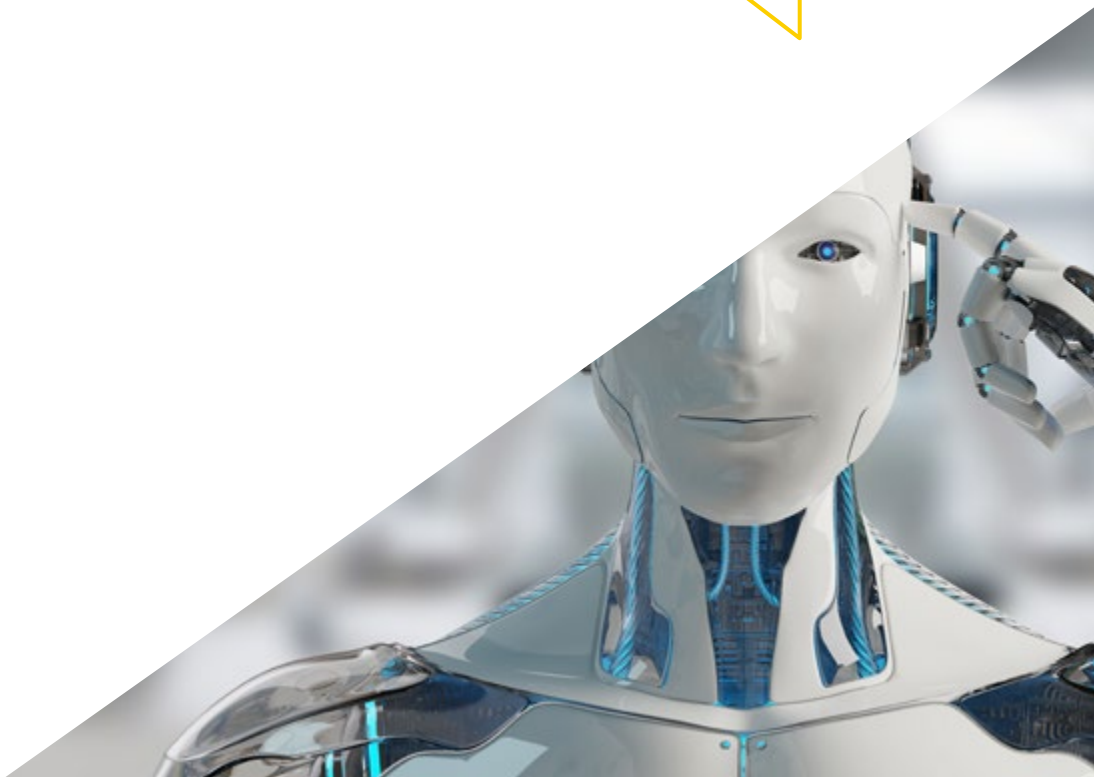
Delve into the different types of algorithms used in Machine Learning and apply it in your professional field.

With the Relearning method you will not have to devote long hours of studies and in just 6 weeks you will get the necessary knowledge.

The program's teaching staff includes professionals from the field 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 students will be assisted by an innovative interactive video system created by renowned and experienced experts.



02

Objectives

The goal of this program is to offer students intensive learning about the latest developments in Big Data and Artificial Intelligence. To achieve this objective with guarantees, TECH provides educational resources in which it has used the latest technology applied to university education. In this way, at the end of the 150 teaching hours, the graduate will have obtained the necessary learning to promote his professional career in this sector.

Top-notch experts provide case studies for you to successfully apply AI in the Engineering field"

General Objectives

- Conduct a comprehensive analysis of the profound transformation and radical paradigm shift being experienced in the current global digitalization process
- Provide in-depth knowledge and the necessary technological tools to face and lead the technological leap and the challenges currently present in companies
- Mastering the digitalization procedures of companies and the automation of their processes to create new fields of wealth in areas such as creativity, innovation and technological efficiency
- Leading Digital Change

Specific Objectives

- Delve into the knowledge of the fundamental principles of artificial intelligence
- Master the techniques and tools of this technology (machine learning/deep learning)
- Obtain a practical knowledge of one of the most widespread applications such as Chatbots and virtual assistants
- Acquire knowledge of the different transversal applications that this technology has in all fields

Thanks to this program you will develop projects based on the latest advances in Machine Learning"

03

Course Management

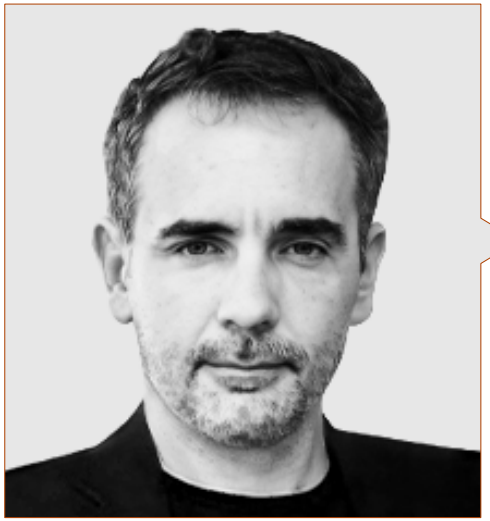
The excellent professional background of the specialists who make up this program has been key to its inclusion in this Postgraduate Certificate. In this way, the graduate will have at his disposal an agenda prepared by experts with accumulated experience in projects based on Big Data and Artificial Intelligence. In addition, thanks to their proximity, Engineers will be able to resolve any doubts that may arise regarding the content of this program.

Experts in Artificial Intelligence, security systems and Digital Transformation make up this first level university program"

Management

Mr. Segovia Escobar, Pablo

- Chief Executive of the Defense Sector in the Company Tecnobit of the Oesía Group
- Corporate Project Director Indra
- Master's Degree in Companies Administration and Management by the National University of Distance Education
- Postgraduate in Strategic Management Function
- Member of: Spanish Association of People with High Intellectual Quotient



Mr. Diezma López, Pedro

- Chief Innovation Officer and CEO of Zerintia Technologies
- Founder of the technology company Acuilae
- Member of the Kebala Group for business incubation and promotion
- Consultant for technology companies such as Endesa, Airbus or Telefónica
- Wearable "Best Initiative" Award in eHealth 2017 and "Best Technological "Solution" 2018 for occupational safety

Professors

Ms. Sánchez López, Cristina

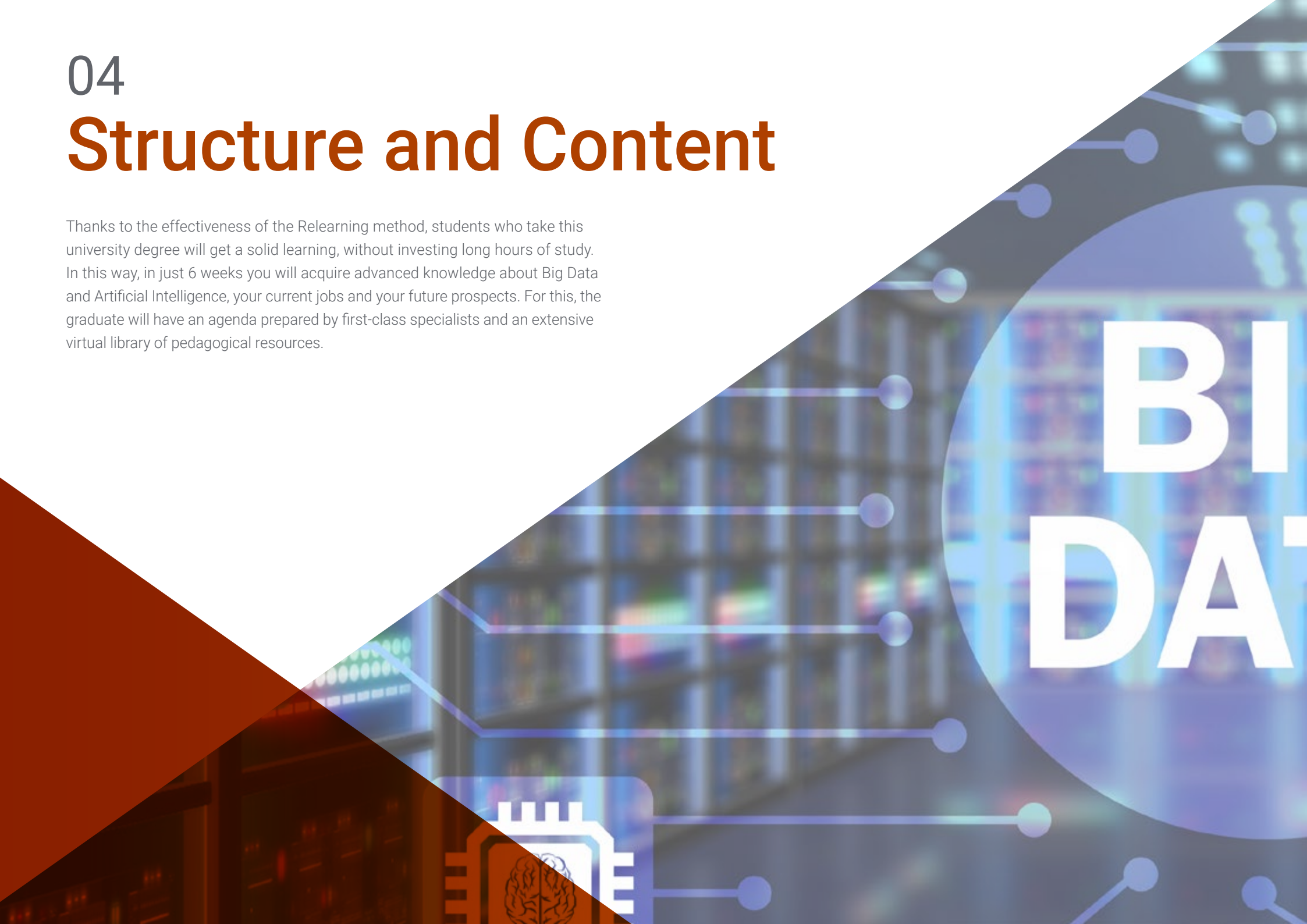
- CEO and founder of Acuilae
- Artificial Intelligence consultant at ANHELA IT
- Creator of Ethyka Software for Computer System Security
- (Software Engineer) for the Accenture Group in large clients such as Bank of Santander, BBVA, Endesa or Barclays Bank
- Master's Degree in Data Science at KSchool
- Degree in Statistics from the Complutense University Madrid

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

Thanks to the effectiveness of the Relearning method, students who take this university degree will get a solid learning, without investing long hours of study. In this way, in just 6 weeks you will acquire advanced knowledge about Big Data and Artificial Intelligence, your current jobs and your future prospects. For this, the graduate will have an agenda prepared by first-class specialists and an extensive virtual library of pedagogical resources.



A complete curriculum that will allow you to keep up with the most effective tools used to work with Big Data"

Module 1. Big Data and Artificial Intelligence

1.1. Fundamental Principles of Big Data
- 1.1.1. Big Data
- 1.1.2. Tools to Work With Big Data

1.2. Data Mining and Warehousing
- 1.2.1. Data Mining Cleaning and Standardization
- 1.2.2. Information Extraction, Machine Translation, Sentiment Analysis, etc
- 1.2.3. Types of Data Storage

1.3. Data Intake Applications
- 1.3.1. Principles of Data intake
- 1.3.2. Data Ingestion Technologies to Serve Business Needs

1.4. Data Visualization
- 1.4.1. The Importance of Data Visualization
- 1.4.2. Tools to Carry It Out Tableau, D3, matplotlib (Python), Shiny®

1.5. Machine Learning
- 1.5.1. Understanding Machine Learning
- 1.5.2. Supervised and Unsupervised Learning
- 1.5.3. Types of Algorithms

1.6. Neural Networks (Deep Learning)
- 1.6.1. Neural Network: Parts and Operation
- 1.6.2. Types of Networks CNN, RNN
- 1.6.3. Applications of Neural Networks; Image Recognition and Natural Language Interpretation
- 1.6.4. Generative Text Networks: LSTM

1.7. Natural Language Recognition
- 1.7.1. PLN (Processing Natural Language)
- 1.7.2. Advanced PLN Techniques: Word2vec, Doc2vec

1.8. Chatbots and Virtual Assistants
- 1.8.1. Types of Assistants: Voice and Text Assistants
- 1.8.2. Fundamental Parts for the Development of an Assistant: Intents, Entities and Dialog Flow
- 1.8.3. Integrations: Web, Slack, WhatsApp, Facebook
- 1.8.4. Assistant Development Tools: Dialogflow, Watson Assistant

1.9. Emotions, Creativity and Personality in IA
  1.9.1. Understand How to Detect Emotions Using Algorithms
  1.9.2. Creating a Personality: Language, Expressions and Content
1.10. Future of Artificial Intelligence
1.11. Reflections

Delve into the future of Artificial Intelligence and its numerous applications in various industries"

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.

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 is the most widely used learning system in the best faculties in the world. 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 program, the studies 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

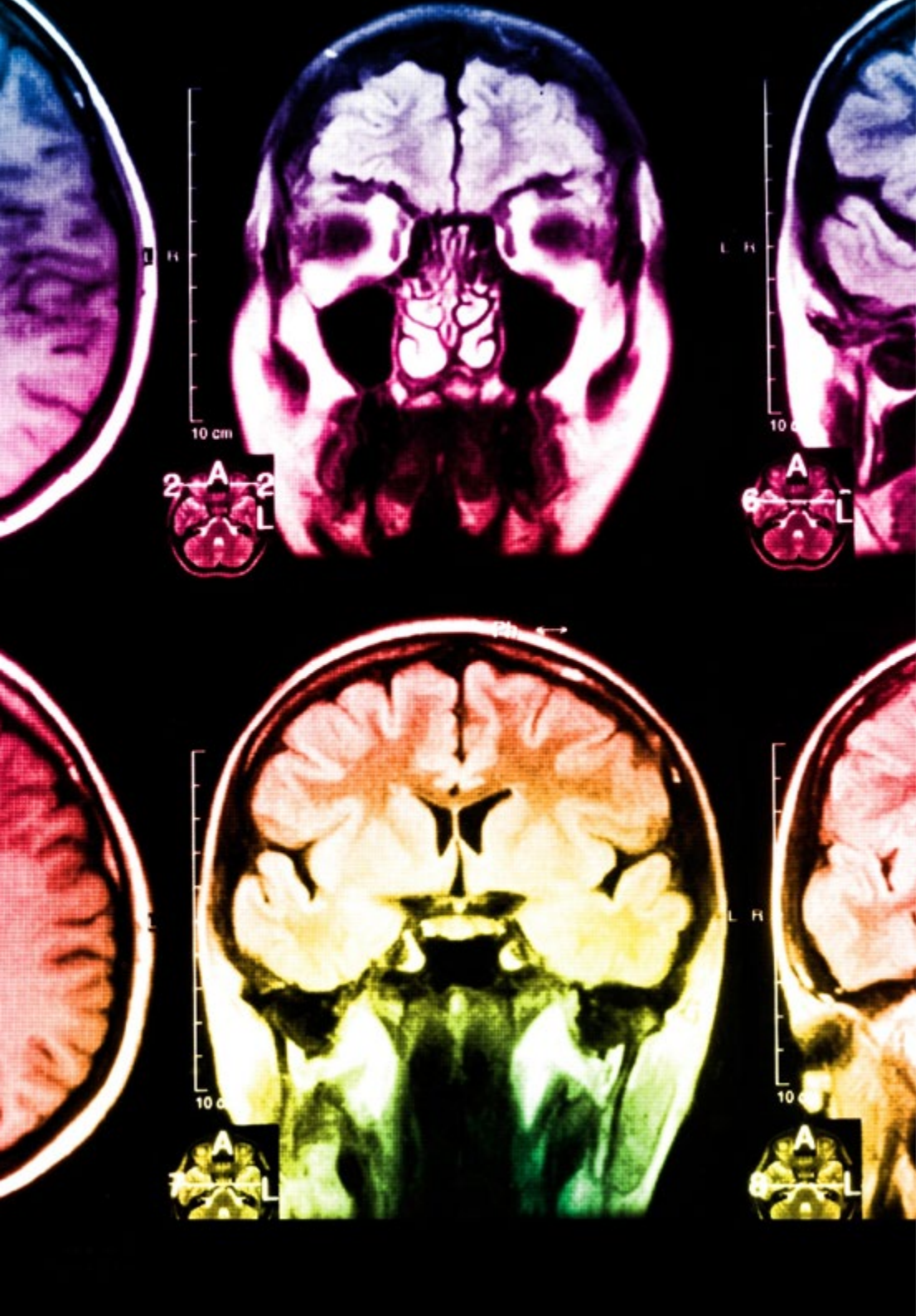
TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines 8 different teaching elements in each lesson.

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.



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.

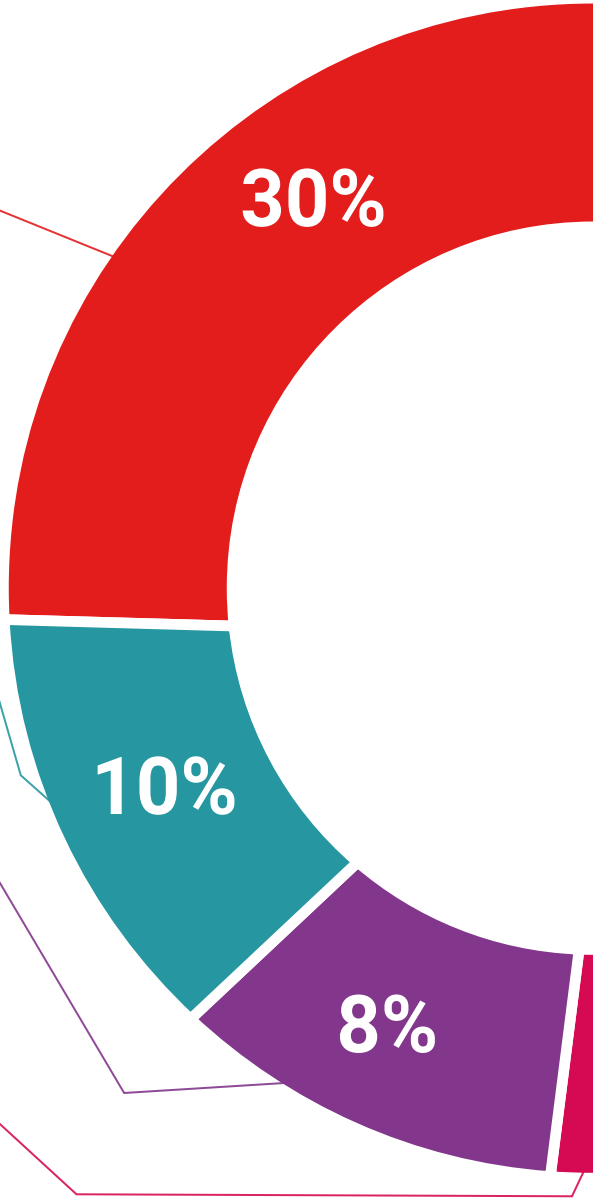
Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

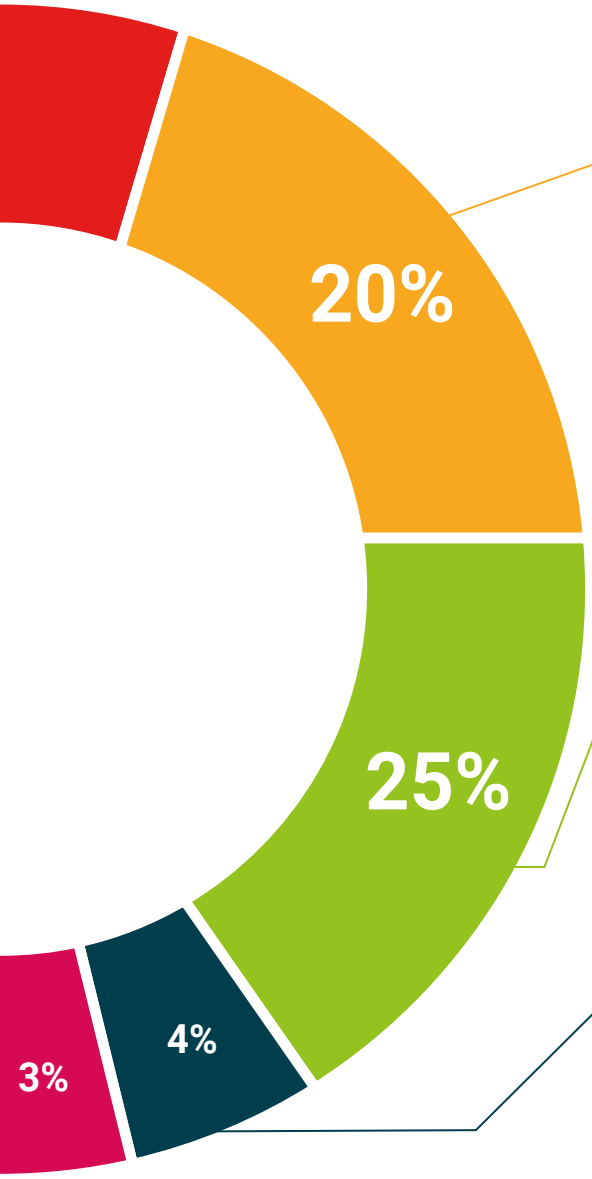
Practising Skills and Abilities

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.





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 Big Data and Artificial Intelligence guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate 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 Certificate in Big Data and Artificial Intelligence** 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 Certificate** issued by **TECH Technological University** via tracked delivery*.

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

Title: **Postgraduate Certificate in Big Data and Artificial Intelligence**

Official Nº of Hours: **150 h**.


tech technological university

Awards the following

CERTIFICATE

to

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

For having passed and accredited the following program

POSTGRADUATE CERTIFICATE

in

Big Data and Artificial Intelligence

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

This qualification must always be accompanied by the university degree issued by the competent authority to practice professionally in each country. 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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