Postgraduate Certificate
NLP/NLU

tech global university

Postgraduate Certificate
NLP/NLU

- » 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/nlp-nlu**

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01

Introduction

Digital Transformation has become a mandatory subject for all companies. Today, the virtual presence of companies is more important than ever. For this reason, executives from all industries are investing money to equip their companies with technologies that offer tangible added value in increasingly disruptive markets. The adoption of Natural Language Processing (NLP) driven systems is a focus that more and more leaders in all types of industries are taking an interest in. This 100% online degree specializes the computer scientist in this novel technology that combines linguistics with computer science to create effective mechanisms for easy communication between humans and computers.

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Specialize in a field that extends to computer science, artificial intelligence and linguistics"

NLP technology is not new, but it is true that its evolution in recent years has undergone exponential growth due to the large volumes of data, current computing power and advances in the field of algorithms. Today, NLP is used for various functions such as mail filters, wizards, search results e.g. in Google, machine translations, sentiment analysis, automatic subtitles, among others.

This Postgraduate Certificate Develop specialized knowledge of NLP and NLU. The latter is a branch of Natural Language is a branch of Natural Language Processing whose purpose is to enable a technological system to understand the meaning and intent of a sentence. technological system to understand the meaning and intention behind a sentence. The graduate will also analyze the operation of *Word Embeddings* and the word2vec library. With *Word Embeddings* you will study the different techniques in which words or phrases are related to each other, which can be represented in mathematical vectors.

Google, at the end of 2017, published a study called *Attention is All You Need* where the Transformer Architecture was presented. This degree develops in depth this architecture, which has allowed in recent years to advance in the field of NLP. To this end, it analyzes the main models: BERT, Roberta, GPT2, GPT3.

Additionally, the student has the best study methodology 100% online, which eliminates the need to attend classes in person or have to comply with a predetermined schedule. To this end, in only 6 weeks will delve into the scope of application of Cloud Computing, understanding the competitive advantages they provide, so they will be positioned at the technological forefront and will be able to lead ambitious projects in the present and in the future.

This **Postgraduate Certificate in NLP/ NLU.** contains the most complete and up-to-date program on the market. The most important features include:

- The development of practical cases presented by experts in NLP/ NLU.
- 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 self-assessment process can be carried out 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

" *NLP opens the doors to a truly mature really mature and efficient data and efficient"*

" *Develops specialized knowledge about NLP and NLU, their main current uses and libraries that allow to work with them"*

Study through the different techniques in which words or phrases are related to each other Cone Word Embedings.

Develop in depth La architecture the Transformer, which has allowed in recent years to advance in the field from NLP.

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 professionals with situated and contextual learning, i.e., a simulated environment that will provide immersive training, designed for training oneself 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 throughout the program. For this purpose, the students will be assisted by an innovative interactive video system created by renowned and experienced experts.
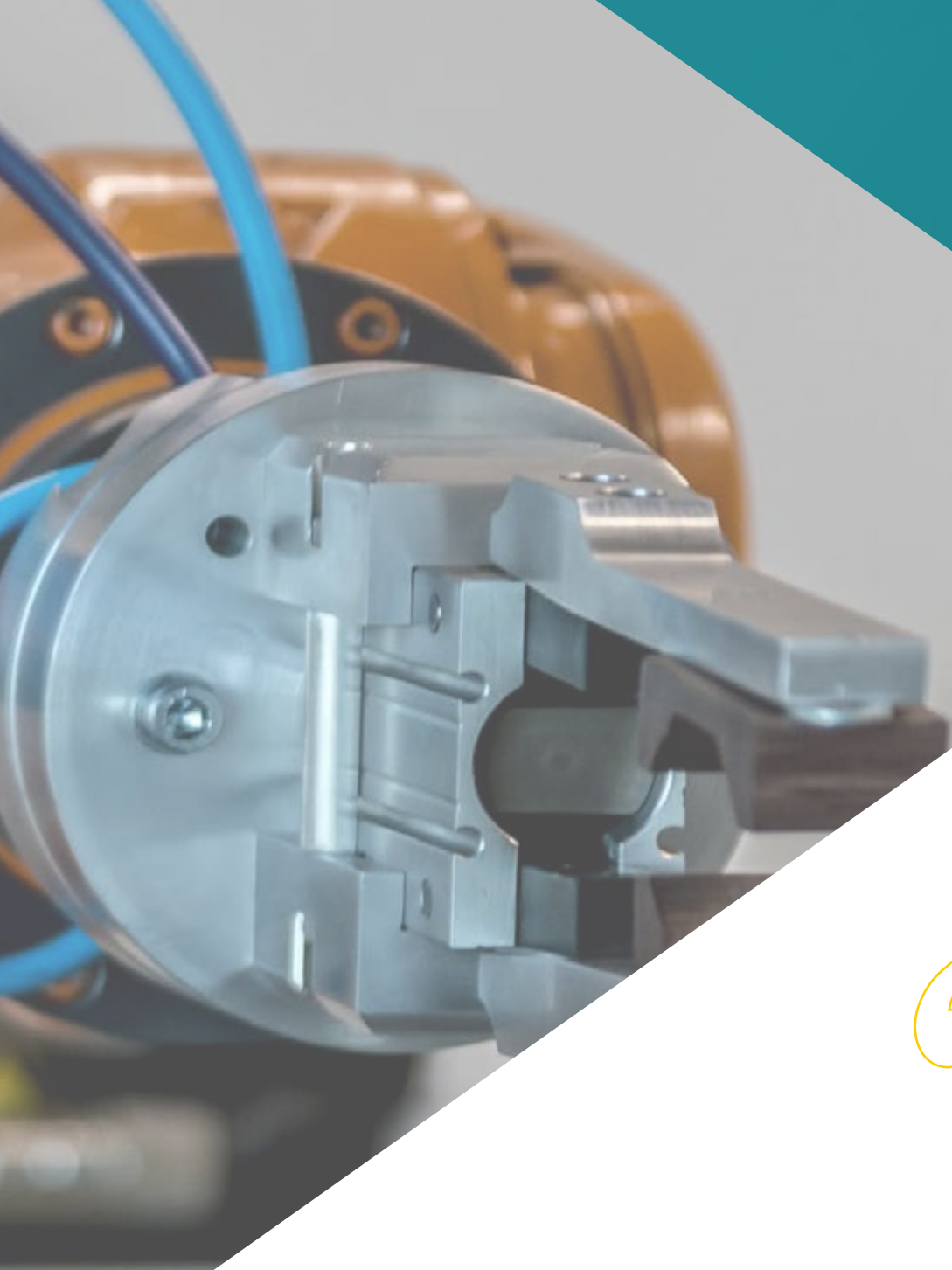
02

Objectives

You will be technically immersed in the most relevant technologies that will play a major role in the technological advances of the coming years. The contents of this degree are not classic subjects; this program specializes the computer scientist in the application of future technologies, but with real applications in the present.

You will be able to apply NLP in the field of financial markets, where there are bots that have an algorithmic trading system"
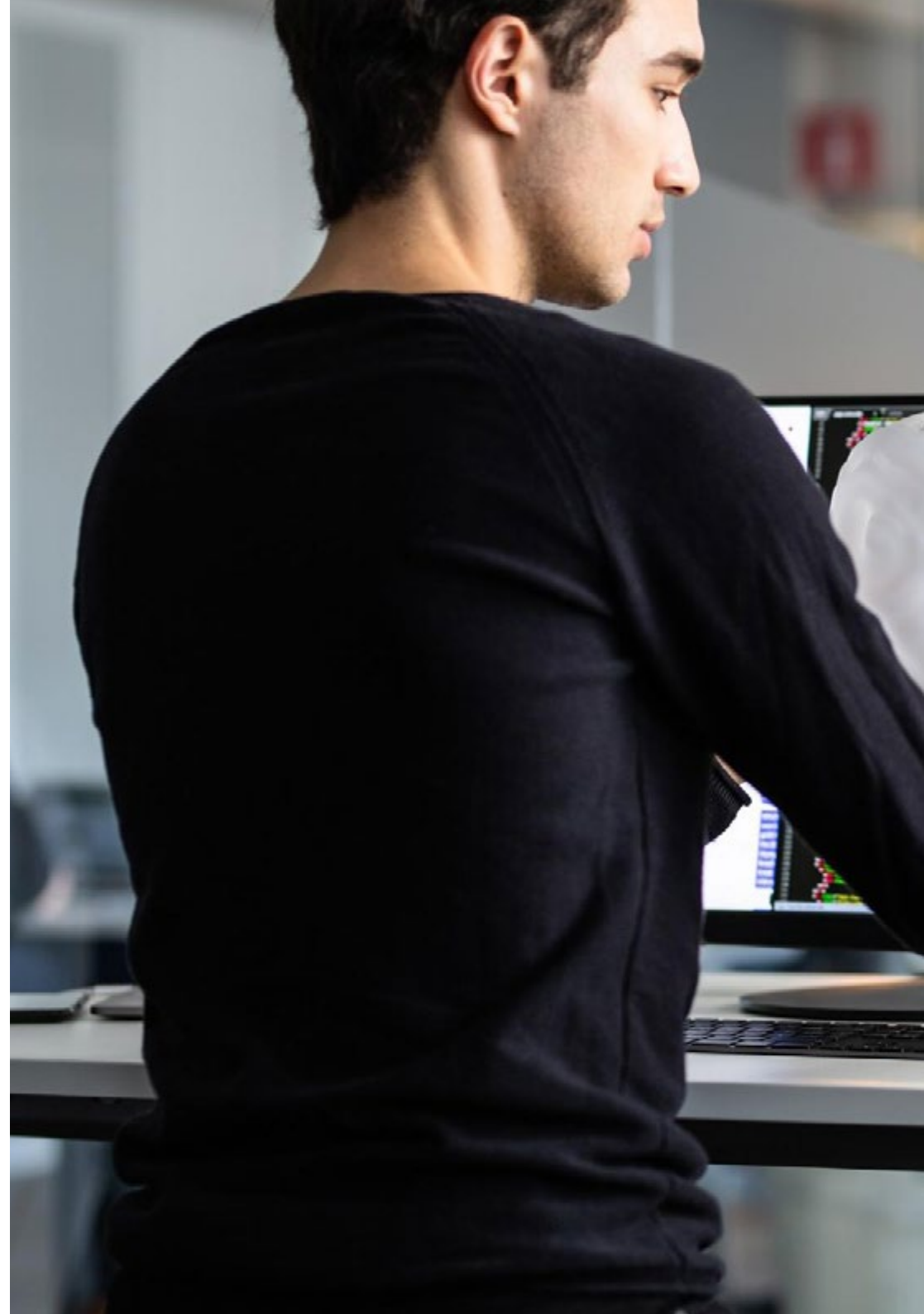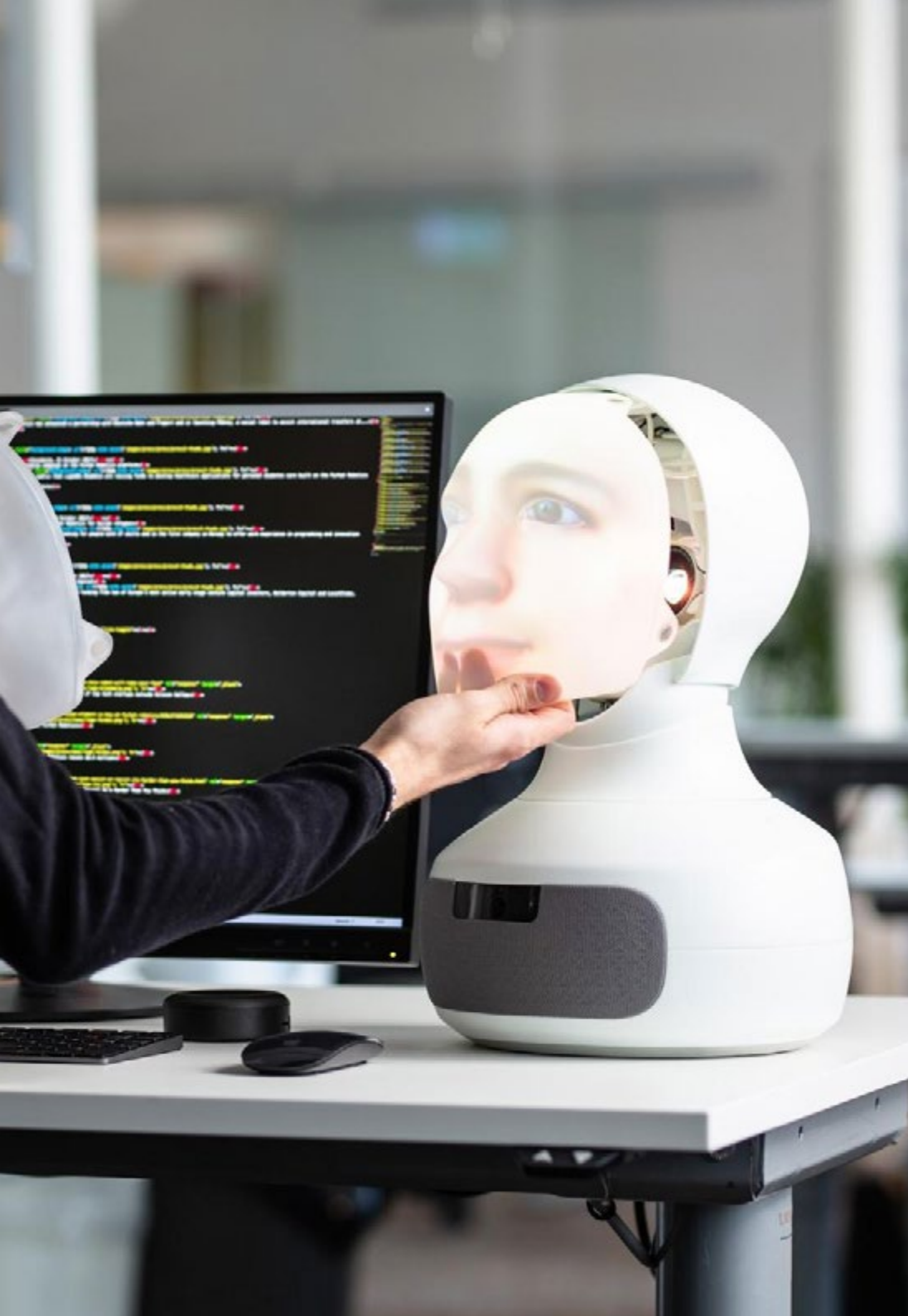
General Objectives

- Develop specialized knowledge of NLP and NLU
- Examine the operation of Word Embeddings
- Analyze the mechanism of Transformers
- Develop Use Cases of where to apply NLP

The application of NLP and NLU in chatbots as business solutions are the fruit of the digital transformation caused by the of the digital transformation brought about by the the fourth industrial revolution"

Specific Objectives

◆ Develop specialized knowledge on NLP Natural Language Processing

◆ Identify NLU (Natural Language Understanding)

◆ Differences between NLP and NLU

◆ Word Embeddings and examples using Word2vec

◆ Analyze Transformers

◆ Examine examples of various Applied Transformers

◆ Delve into the NLP/NLU field through common Case Studies

03
Course Management

TECH has made an exhaustive search for the best professionals in leading technologies and disciplines. Experts in the field of information and Virtualization technologies come together in this Professional Master's Degree to teach graduates the newest technologies and areas of study and the most disruptive and surprising practical applications that can be found. The teachers will give the keys and tools that are in their hands to lead the computer scientist to use cases to identify in which fields NLP can be applied.

> *NLP is growing and there are practitioners specializing in speech or text as well as comprehension or generation. Become one of them too"*
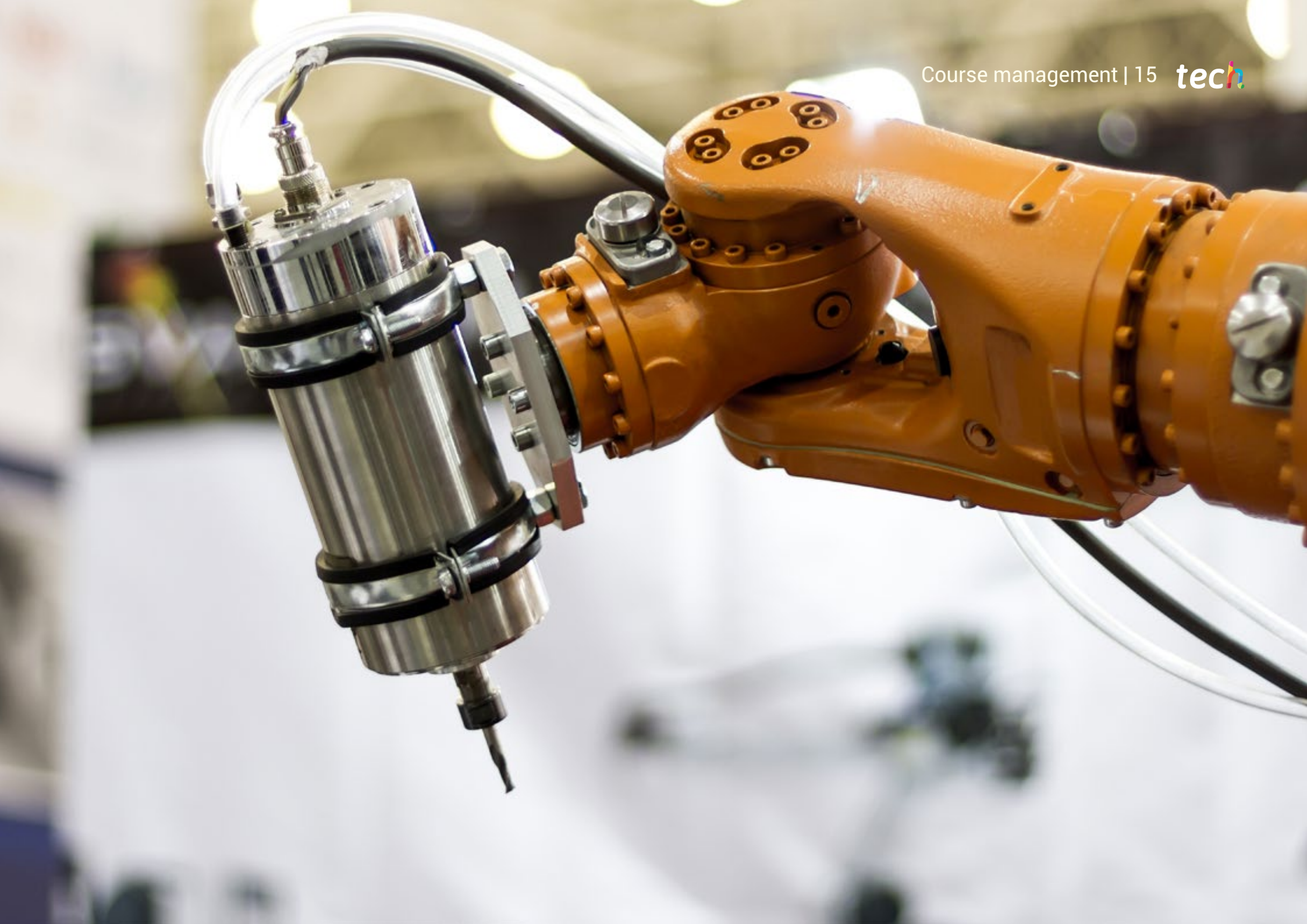
Management

Mr. Molina Molina, Jerónimo

- Head of Artificial Intelligence at Helphone
- AI Engineer & Software Architect at NASSAT, Internet Satellite in Motion.
- Senior Consultant at Hexa Engineer
- Artificial Intelligence Introducer (ML and CV)
- Expert in Artificial Intelligence Based Solutions in the fields of Computer Vision, ML/DL and NLP
- Postgraduate Diploma in Business Creation and Development at Bancaixa and Fundeun.
- Computer Engineer by the University of Alicante
- Professional Master's Degree in Artificial Intelligence from the Catholic University of Avila.
- MBA Executive at the European Business Campus Forum

Professors

Mr. Pi Morell, Oriol

- Functional Analyst at Fihoca
- Hosting and Mail Product Owner at CDmon
- Functional Analyst and Software Engineer at Atmira and Capgemini.
- Teacher at Capgemini, Forms Capgemini and Atmira.
- Degree in Technical Engineering in Computer Management from the Autonomous University of Barcelona.

- Master's Degree in Artificial Intelligence from the Catholic University of Avila.
- MBA in Business Management and Administration from IMF Smart Education
- Professional Master's Degree in Information Systems Management from IMF Smart Education.
- Postgraduate degree in Design Patterns from the Universitat Oberta de Catalunya (Open University of Catalonia).

04

Structure and Content

This Postgraduate Certificate contains in a module specialized knowledge on the different options offered NLP technology and NLU. It also offers a complete and specialized view of the meaning of Word Embeddings and the word2vec library, as well as an advanced knowledge of the Transformer Architecture. All this from a practical and innovative business perspective, thereby ensuring that the contents have a highly practical focus.
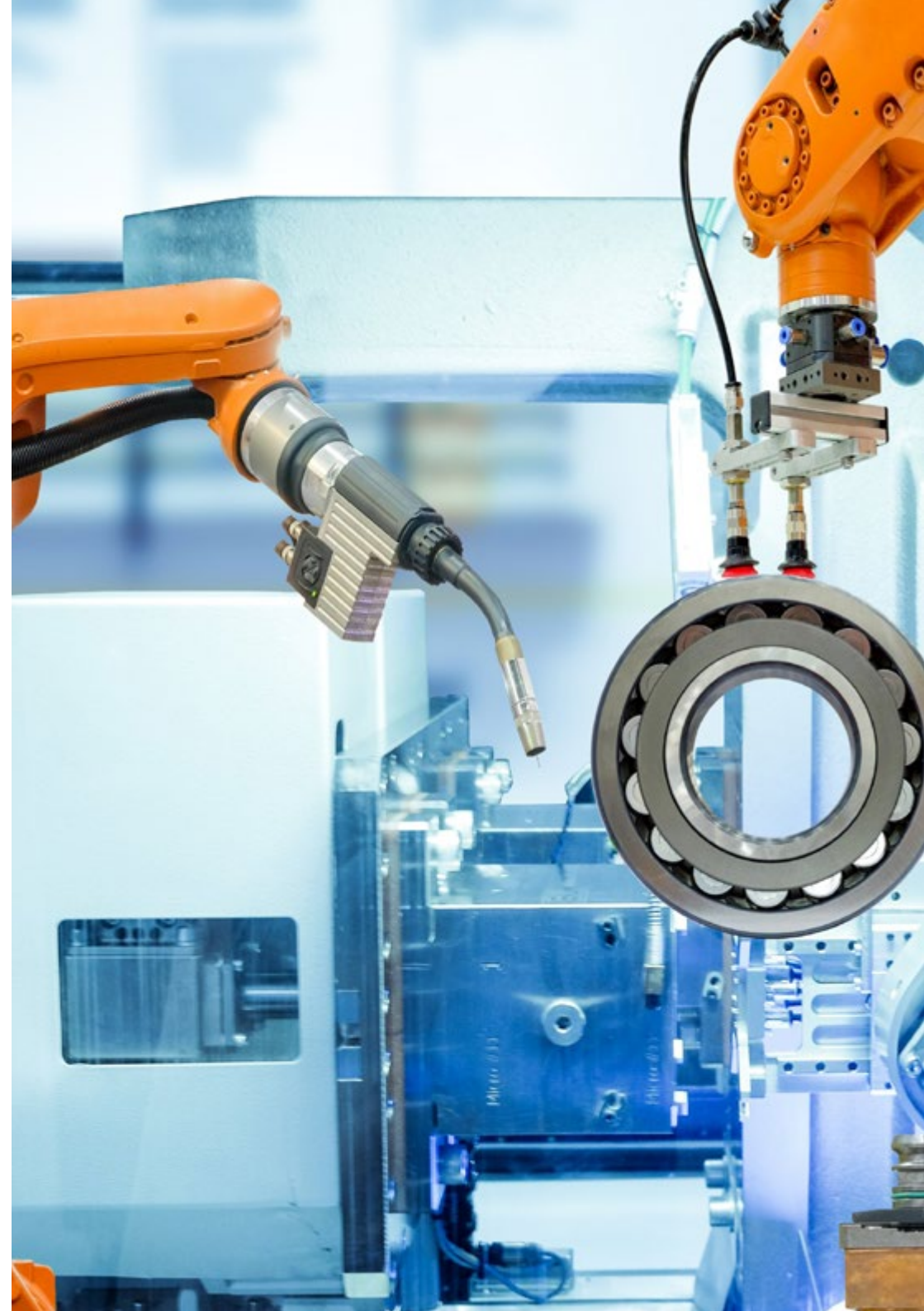
NLP tries to make human language understandable to a machine in five major areas: phonology, morphology, syntax, semantics and pragmatics"

Module 1. - R&D and AI NLP/NLU. Embeddings and Transformers

As processing power and automation improves, the tools already developed are advanced and new ways of applying NLP emerge"

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.

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 NLP/NLU 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 NLP/NLU** 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 NLP/NLU**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**

tech global university

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

Postgraduate Certificate in NLP/NLU

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

*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.

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