Postgraduate Certificate

Linguistic Models and Artificial Intelligence Application

tech global university

Postgraduate Certificate
Linguistic Models and Artificial Intelligence Application

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

Website: **www.techtitute.com/us/humanities/postgraduate-certificate/linguistic-models-artificial-intelligence-application**

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01
Introduction

AI-driven linguistic models have transformed Natural Language Processing (NLP), enabling machines to understand and generate text in an increasingly accurate and coherent manner. In fact, tools such as GPT and BERT, based on deep neural networks, are used for advanced tasks such as machine translation, sentiment analysis and content generation. These advances have improved human-machine interaction in areas such as customer service and virtual assistants. In this context, TECH offers a program that is developed 100% online, so that professionals can train without the need to interrupt other occupations. It is also based on the innovative Relearning methodology.

" Enroll now in this 100% online Postgraduate Certificate, in which you will delve into the generation of linguistic models developed through advanced Artificial Intelligence tools"

Artificial Intelligence-based linguistic models are changing the way Humanities professionals analyze and understand language and textual data. In fact, some commonly used tools, supported by deep neural networks, allow massive text processing, facilitating the analysis of large volumes of information, from sociological studies to political research.

This is how this Postgraduate Certificate was created, which will delve into theories such as generative grammar, structural linguistics and formal grammar, highlighting how these conceptual foundations are still applicable in the development of AI models. In this sense, practical applications of these models in the automation of language processing will be presented.

Also, probabilistic models in linguistics and their application in Artificial Intelligence will be discussed, including Hidden Markov Models (HMM) and statistical language models. It will also address supervised and unsupervised learning algorithms, and how they are implemented in technologies such as speech recognition and automatic text processing.

Finally, deep learning models applied to Natural Language Processing (NLP) will be explored, delving into convolutional, recurrent and LSTM neural networks, as well as attention models and transformers. These technologies are fundamental for advanced applications such as machine translation, text generation and sentiment analysis. In addition, it will analyze how these models allow the creation of robust systems that understand and generate language fluently, improving the interaction between humans and machines in increasingly complex environments.

In this way, this 100% online program will offer graduates the flexibility to study from anywhere and at any time that suits them best. All they need is an electronic device with Internet access to access all the teaching materials. In addition, the revolutionary Relearning methodology will be implemented, which promotes effective learning through continuous repetition.

This **Postgraduate Certificate in Linguistic Models and Artificial Intelligence Application** 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 Artificial Intelligence applied to Translation and Interpreting
- 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 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 successfully manage deep learning models in linguistics, as well as their use in Artificial Intelligence, with the help of the revolutionary Relearning methodology, a pioneer in TECH"

" *You will reinforce your knowledge in formal grammar and rule systems, complementing this training with the handling of advanced AI programs, all thanks to an extensive library of innovative multimedia resources"*

Become a professional with a unique background, mastering the main theories on structural linguistics, classical models in Artificial Intelligence and other essential knowledge.

You will tackle different probabilistic models in linguistics, using applications in speech recognition and text processing, for the proposition of new AI-based linguistic models.

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 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 course. For this purpose, students will be assisted by an innovative interactive video system created by renowned experts in the field of educational coaching with extensive experience.

02
Objectives

The main objective of this curriculum is to train students in the complete mastery of Linguistic Models and Application of Artificial Intelligence. In fact, professionals will specifically address knowledge representation and computational logic, some applications in dialogue systems and virtual assistants, among others. In addition, they will emphasize the application of composition techniques to generate bag-of-words models and continuous language models. Therefore, through hours of training, the graduates will obtain the essential tools to create efficient translations, languages and conversations with AI.

"

You will be able to implement statistical language models to encourage applications in information retrieval, document clustering and content recommendation. With all the TECH quality guarantees!"

General Objectives

- Understand classical and modern linguistic models and their application in Artificial Intelligence

- Acquire skills to use and optimize AI tools in real-time translation, ensuring accuracy and fluency in multilingual contexts

- Become skilled in the use of the main AI-assisted translation platforms and tools, integrating them effectively into the professional workflow

- Equip yourself with the necessary skills to lead projects and teams in the implementation of AI solutions in the field of translation and interpreting
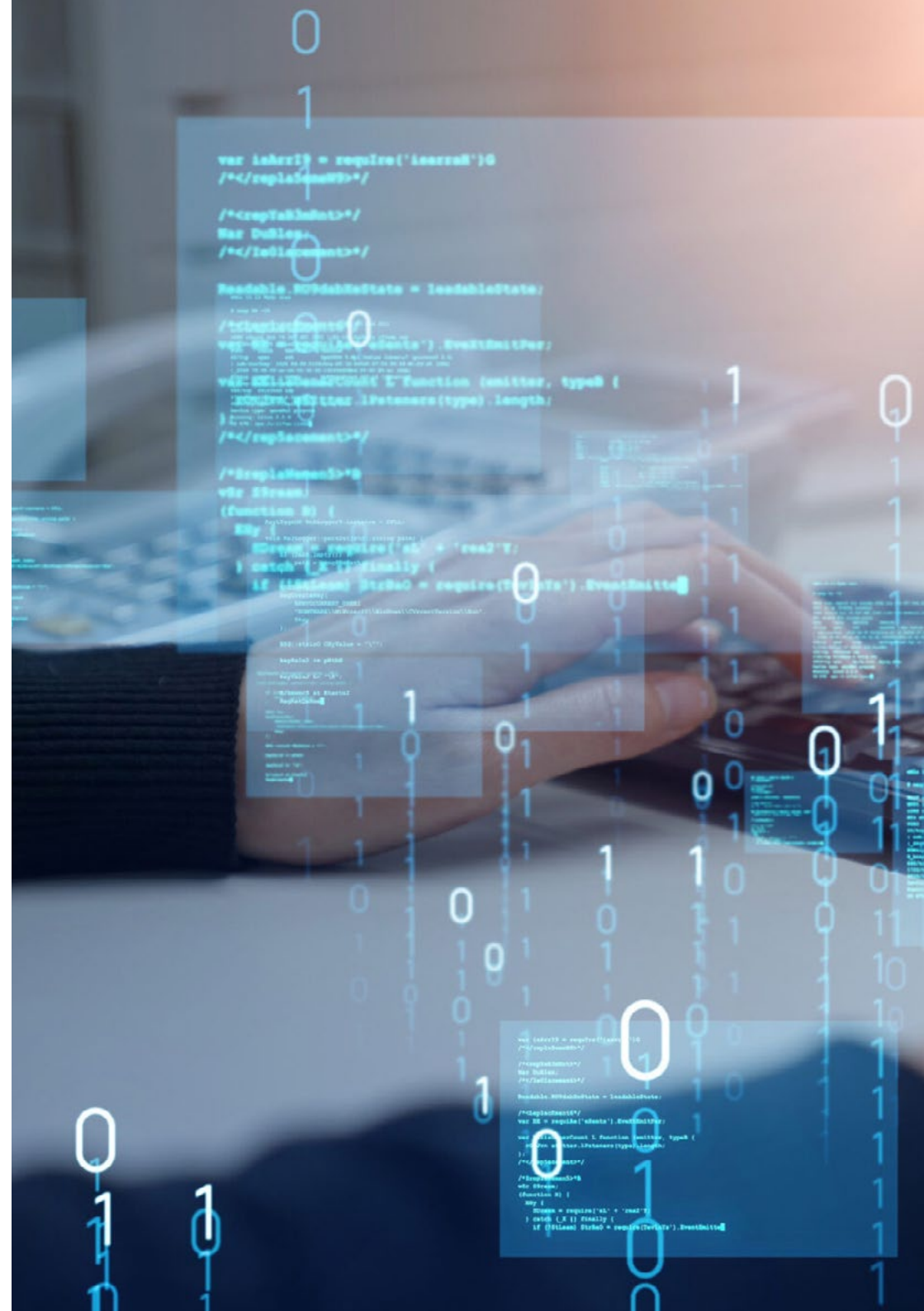
Specific Objectives

- Acquire a solid knowledge of the different linguistic models, from classical to AI-based, and their relevance in translation and interpreting
- Develop the skills to apply probabilistic, rule-based and deep learning models in Natural Language Processing (NLP) tasks

You will employ the latest innovations in AI machine translation models and take your skills to the next level, equipping you with key tools to excel in an ever-evolving field"

03
Course Management

The faculty of this university program is composed of distinguished professionals carefully selected by TECH. In fact, these experts have solid professional experience in linguistic modeling, bringing a practical and relevant perspective to the syllabus. Therefore, their background includes significant contributions to the field of Artificial Intelligence, consolidating a team of instructors capable of guiding graduates towards the mastery of advances in neural machine translation. In addition, this faculty will ensure a comprehensive and up-to-date preparation, providing cutting-edge knowledge backed by many years of impeccable work.

"

The academic focus of the faculty will ensure that you will receive current and relevant training, equipping you with effective skills for the handling of Artificial Intelligence programs, such as Word Embeddings"

Management

Dr. Peralta Martín-Palomino, Arturo

- CEO and CTO at Prometeus Global Solutions
- CTO at Korporate Technologies
- CTO at AI Shepherds GmbH
- Consultant and Strategic Business Advisor at Alliance Medical
- Director of Design and Development at DocPath
- PhD in Psychology from the University of Castilla La Mancha
- PhD in Economics, Business and Finance from the Camilo José Cela University
- PhD in Psychology from University of Castilla La Mancha
- Master's Degree in Executive MBA from the Isabel I University
- Master's Degree in Sales and Marketing Management, Isabel I University
- Expert Master's Degree in Big Data by Hadoop Training
- Master's Degree in Advanced Information Technologies from the University of Castilla La Mancha
- Member of the research group SMILE

Professors

Ms. Martínez Cerrato, Yésica

- Responsible for Technical Training at Securitas Seguridad España
- Education, Business and Marketing Specialist
- Product Manager in Electronic Security at Securitas Seguridad España
- Business Intelligence Analyst at Ricopia Technologies
- Computer Technician and Responsible for OTEC computer classrooms at the University of Alcalá de Henares
- Collaborator in the ASALUMA Association
- Degree in Electronic Communications Engineering at the Polytechnic School, University of Alcalá de Henares

Ms. Del Rey Sánchez, Cristina

- Talent Management Administrative Officer at Securitas Seguridad España, S.L
- Extracurricular Activities Center Coordinator
- Support classes and pedagogical interventions with Primary and Secondary Education students
- Postgraduate in Development, Delivery and Tutoring of e-Learning Training Actions
- Postgraduate in Early Childhood Care
- Degree in Pedagogy from the Complutense University of Madrid

04

Structure and Content

This academic program will cover a variety of AI-driven linguistic models, with a focus on their application in Natural Language Processing (NLP). It will also provide an analysis of probabilistic models, rule-based methods and learning techniques, enabling professionals to use these tools in tasks such as machine translation and real-time interpretation. In addition, the focus of this program will be divided into theory and practice, integrating relevant scientific content and real case studies.
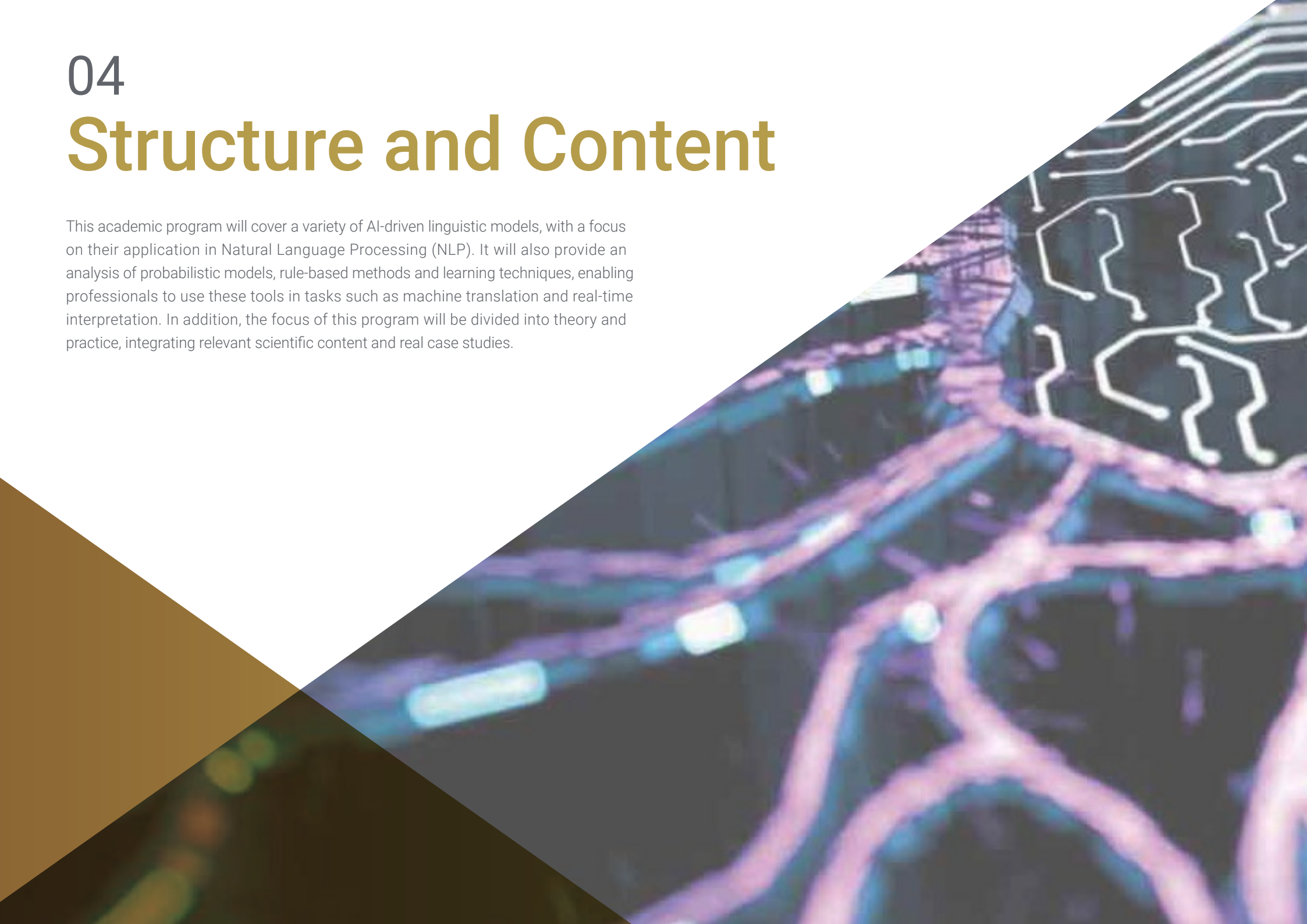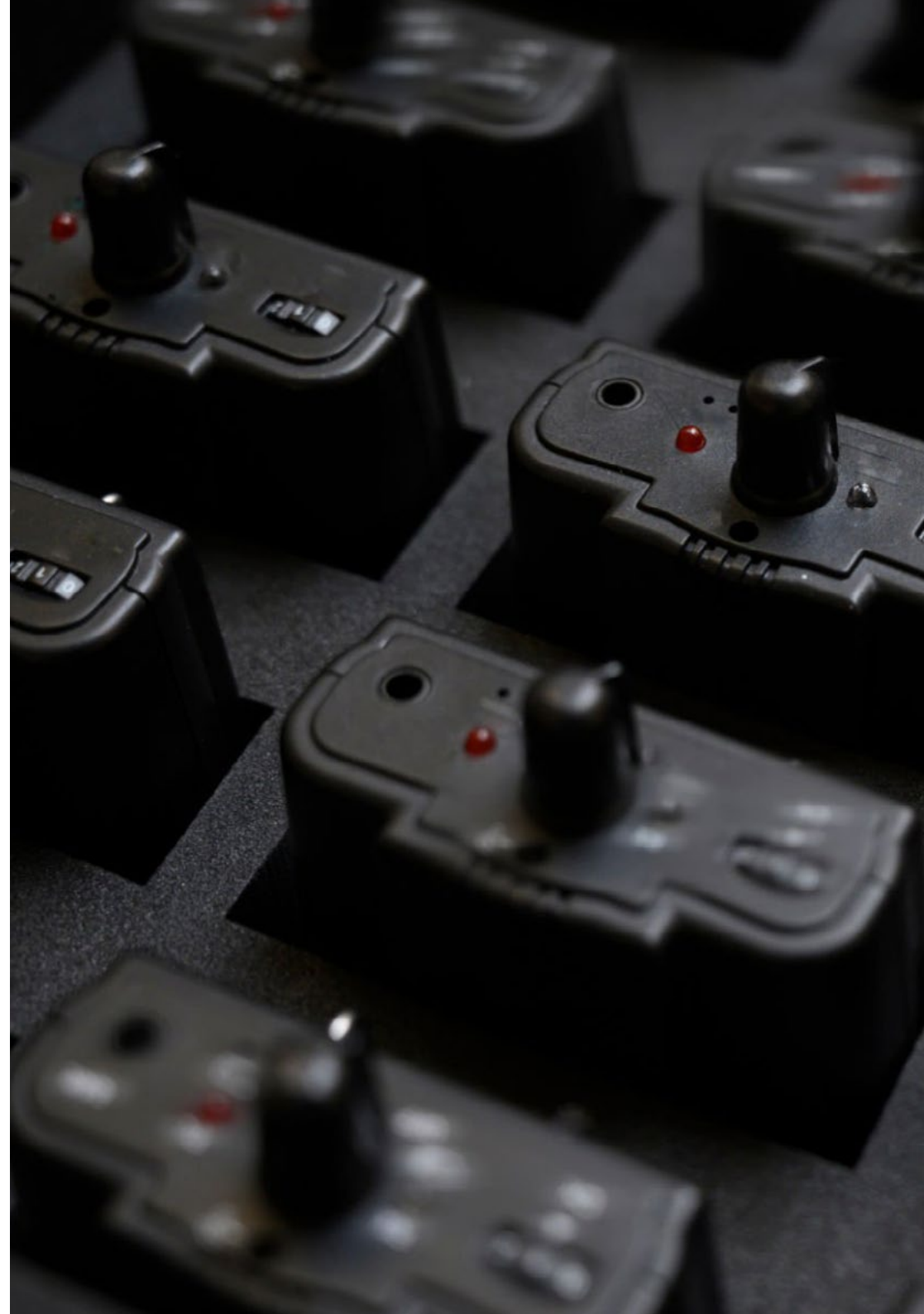
This comprehensive and up-to-date curriculum will ensure you acquire knowledge focused on conditioned and controlled text generation, as well as applications in machine writing"

Module 1. Linguistic Models and Artificial Intelligence Application

1.1.   Classical Models of Linguistics and their Relevance to AI
    1.1.1.   Generative and Transformational Grammar
    1.1.2.   Structural Linguistic Theory
    1.1.3.   Formal Grammar Theory
    1.1.4.   Applications of Classical Models in AI

1.2.   Probabilistic Models in Linguistics and Their Application in AI
    1.2.1.   Hidden Markov Models (HMM)
    1.2.2.   Statistical Language Models
    1.2.3.   Supervised and Unsupervised Learning Algorithms
    1.2.4.   Applications in Speech Recognition and Text Processing

1.3.   Rule-Based Models and Their Implementation in AI. GPT
    1.3.1.   Formal Grammars and Rule Systems
    1.3.2.   Knowledge Representation and Computational Logic
    1.3.3.   Expert Systems and Inference Engines
    1.3.4.   Applications in Dialog Systems and Virtual Assistants

1.4.   Deep Learning Models in Linguistics and Their Use in AI
    1.4.1.   Convolutional Neural Networks for Text Processing
    1.4.2.   Recurrent Neural Networks and LSTM for Sequence Modeling
    1.4.3.   Attention Models and Transformers. APERTIUM
    1.4.4.   Applications in Machine Translation, Text Generation and Sentiment Analysis

1.5.   Distributed Language Representations and Their Impact on AI
    1.5.1.   Word Embeddings and Vector Space Models
    1.5.2.   Distributed Representations of Sentences and Documents
    1.5.3.   Bag-of-Words Models and Continuous Language Models
    1.5.4.   Applications in Information Retrieval, Document Clustering and Content Recommendation

1.6.   Machine Translation Models and Their Evolution in AI. Lilt
    1.6.1.   Statistical and Rule-Based Translation Models
    1.6.2.   Advances in Neural Machine Translation
    1.6.3.   Hybrid Approaches and Multilingual Models
    1.6.4.   Applications in Online Translation and Content Localization Services

This program has been designed for Humanities professionals with an interest in understanding the impact of human understanding of language on future applications of Artificial General Intelligence (AGI)"

05
Study Methodology

TECH is the world's first university to combine the **case study** methodology with **Relearning**, a 100% online learning system based on guided repetition.

This disruptive pedagogical strategy has been conceived to offer professionals the opportunity to update their knowledge and develop their skills in an intensive and rigorous way. A learning model that places students at the center of the educational process giving them the leading role, adapting to their needs and leaving aside more conventional methodologies.

TECH will prepare you to face new challenges in uncertain environments and achieve success in your career"

The student: the priority of all TECH programs

In TECH's study methodology, the student is the main protagonist.
The teaching tools of each program have been selected taking into account the demands of time, availability and academic rigor that, today, not only students demand but also the most competitive positions in the market.

With TECH's asynchronous educational model, it is students who choose the time they dedicate to study, how they decide to establish their routines, and all this from the comfort of the electronic device of their choice. The student will not have to participate in live classes, which in many cases they will not be able to attend. The learning activities will be done when it is convenient for them. They can always decide when and from where they want to study.

" *At TECH you will NOT have live classes (which you might not be able to attend)"*

The most comprehensive study plans at the international level

TECH is distinguished by offering the most complete academic itineraries on the university scene. This comprehensiveness is achieved through the creation of syllabi that not only cover the essential knowledge, but also the most recent innovations in each area.

By being constantly up to date, these programs allow students to keep up with market changes and acquire the skills most valued by employers. In this way, those who complete their studies at TECH receive a comprehensive education that provides them with a notable competitive advantage to further their careers.

And what's more, they will be able to do so from any device, pc, tablet or smartphone.

TECH's model is asynchronous, so it allows you to study with your pc, tablet or your smartphone wherever you want, whenever you want and for as long as you want"

Case Studies and Case Method

The case method has been the learning system most used by the world's best business schools. Developed in 1912 so that law students would not only learn the law based on theoretical content, its function was also to present them with real complex situations. In this way, they could make informed decisions and value judgments about how to resolve them. In 1924, Harvard adopted it as a standard teaching method.

With this teaching model, it is students themselves who build their professional competence through strategies such as Learning by Doing or Design Thinking, used by other renowned institutions such as Yale or Stanford.

This action-oriented method will be applied throughout the entire academic itinerary that the student undertakes with TECH. Students will be confronted with multiple real-life situations and will have to integrate knowledge, research, discuss and defend their ideas and decisions. All this with the premise of answering the question of how they would act when facing specific events of complexity in their daily work.

Relearning Methodology

At TECH, case studies are enhanced with the best 100% online teaching method: Relearning.

This method breaks with traditional teaching techniques to put the student at the center of the equation, providing the best content in different formats. In this way, it manages to review and reiterate the key concepts of each subject and learn to apply them in a real context.

In the same line, and according to multiple scientific researches, reiteration is the best way to learn. For this reason, TECH offers between 8 and 16 repetitions of each key concept within the same lesson, presented in a different way, with the objective of ensuring that the knowledge is completely consolidated during the study process.

Relearning will allow you to learn with less effort and better performance, involving you more in your specialization, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation to success.

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)

A 100% online Virtual Campus with the best teaching resources

In order to apply its methodology effectively, TECH focuses on providing graduates with teaching materials in different formats: texts, interactive videos, illustrations and knowledge maps, among others. All of them are designed by qualified teachers who focus their work on combining real cases with the resolution of complex situations through simulation, the study of contexts applied to each professional career and learning based on repetition, through audios, presentations, animations, images, etc.

The latest scientific evidence in the field of Neuroscience points to the importance of taking into account the place and context where the content is accessed before starting a new learning process. Being able to adjust these variables in a personalized way helps people to remember and store knowledge in the hippocampus to retain it in the long term. This is a model called Neurocognitive context-dependent e-learning that is consciously applied in this university qualification.

In order to facilitate tutor-student contact as much as possible, you will have a wide range of communication possibilities, both in real time and delayed (internal messaging, telephone answering service, email contact with the technical secretary, chat and videoconferences).

Likewise, this very complete Virtual Campus will allow TECH students to organize their study schedules according to their personal availability or work obligations. In this way, they will have global control of the academic content and teaching tools, based on their fast-paced professional update.

"The online study mode of this program will allow you to organize your time and learning pace, adapting it to your schedule"

The effectiveness of the method is justified by four fundamental achievements:

1. Students who follow this method not only achieve the assimilation of concepts, but also a development of their mental capacity, through exercises that assess real situations and the application of knowledge.

2. Learning is solidly translated into practical skills that allow the student to better integrate into the real world.

3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life.

4. Students like to feel that the effort they put into their studies is worthwhile. This then translates into a greater interest in learning and more time dedicated to working on the course.

The university methodology top-rated by its students

The results of this innovative teaching model can be seen in the overall satisfaction levels of TECH graduates.

The students' assessment of the quality of teaching, quality of materials, course structure and objectives is excellent. Not surprisingly, the institution became the best rated university by its students on the Trustpilot review platform, obtaining a 4.9 out of 5.

Access the study contents from any device with an Internet connection (computer, tablet, smartphone) thanks to the fact that TECH is at the forefront of technology and teaching.

You will be able to learn with the advantages that come with having access to simulated learning environments and the learning by observation approach, that is, Learning from an expert.

As such, the best educational materials, thoroughly prepared, will be available in this program:

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.

This content is then adapted in an audiovisual format that will create our way of working online, with the latest techniques that allow us to offer you high quality in all of the material that we provide you with.

Practicing Skills and Abilities

You will carry out activities to develop specific competencies and skills in each thematic field. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop within the framework of the globalization we live in.

Interactive Summaries

We present 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".

Additional Reading

Recent articles, consensus documents, international guides... In our virtual library you will have access to everything you need to complete your education.

20%

15%

15%

3%

20%

17%

7%

3%

Case Studies

Students will complete a selection of the best case studies in the field. Cases that are presented, analyzed, and supervised by the best specialists in the world.

Testing & Retesting

We periodically assess and re-assess your knowledge throughout the program. We do this on 3 of the 4 levels of Miller's Pyramid.

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 for future difficult decisions.

Quick Action Guides

TECH offers the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical and effective way to help students progress in their learning.

Certificate

The Postgraduate Certificate in Linguistic Models and Artificial Intelligence Application 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 private qualification will allow you to obtain a **Postgraduate Certificate in Linguistic Models and Artificial Intelligence Application** 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** private qualification 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 Linguistic Models and Artificial Intelligence Application**

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 Linguistic Models and Artificial Intelligence Application

This is a private qualification 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
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 Global University will make the necessary arrangements to obtain it, at an additional cost.

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Postgraduate Certificate

Linguistic Models and Artificial Intelligence Application

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