Postgraduate Certificate

Introduction to Artificial Intelligence

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Postgraduate Certificate

Introduction to Artificial Intelligence

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

Website: www.techtitute.com/us/information-technology/postgraduate-certificate/introduction-artificial-intelligence

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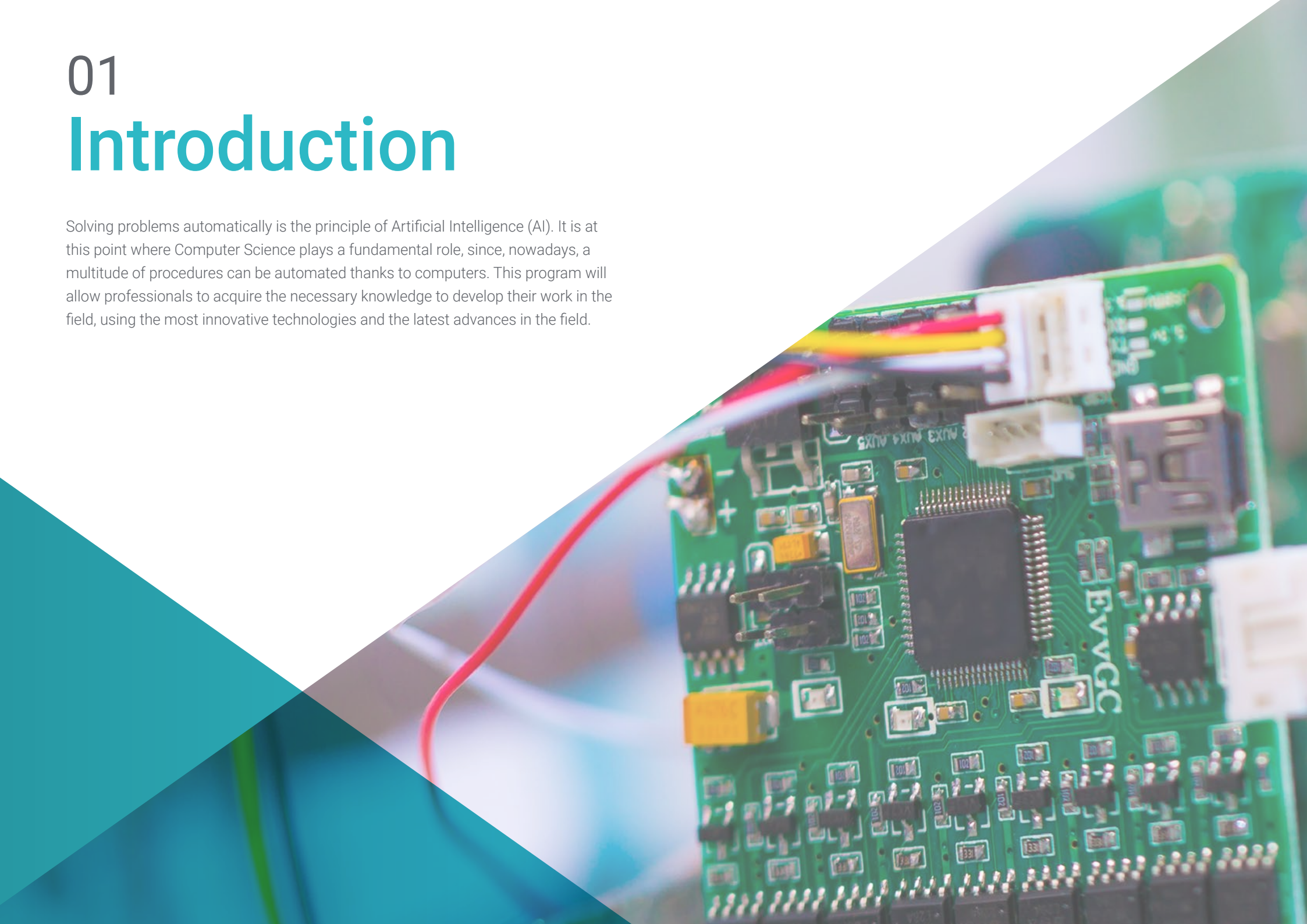
01

Introduction

Solving problems automatically is the principle of Artificial Intelligence (AI). It is at this point where Computer Science plays a fundamental role, since, nowadays, a multitude of procedures can be automated thanks to computers. This program will allow professionals to acquire the necessary knowledge to develop their work in the field, using the most innovative technologies and the latest advances in the field.



Artificial Intelligence is here to stay. Therefore, professionals must enter this field to learn about the many advances that exist"

The developments based on Artificial Intelligence have already reached numerous applications in the field of Engineering. From the automation of numerous procedures in industry and companies, to its own process control. Specialization in engineering knowledge is also important in this field, since it is thanks to it that automatic systems can be created.

The teaching team of this Postgraduate Certificate in Introduction to Artificial Intelligence has made a careful selection of each of the topics of this program to offer the student a study opportunity as complete as possible and always linked to present.

This program aims to introduce the basics of Artificial Intelligence, for which the students must face complex problems that will allow him to develop their skills to find the solution, identifying the most appropriate techniques for its resolution.

This program provides students with specific tools and skills to successfully develop their professional activity in the broad environment of Artificial Intelligence; likewise, they work on key competencies such as knowledge of the reality and daily practice in different computer areas and develop responsibility in the monitoring and supervision of their work, as well as specific skills within this field.

Additionally, as it is a 100% online program, the student is not constrained by fixed timetables or the need to move to another physical location, but can access the contents at any time of the day, balancing their professional or personal life with their academic life.

The **Postgraduate Certificate in Introduction to Artificial Intelligence** contains the most complete and up-to-date program on the market. The most important features include:

- Development of practical cases presented by experts in Artificial Intelligence
- The graphic, schematic, and practical contents with which they are created, provide scientific and 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 in Artificial Intelligence
- 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

Do not miss the opportunity to study this Postgraduate Certificate in Introduction to Artificial Intelligence. It's the perfect opportunity to advance your career”

This Postgraduate Certificate is the best investment you can make when choosing a refresher program to expand your existing knowledge of Artificial Intelligence"

This program comes with the best educational material, providing you with a contextual approach that will facilitate your learning.

This 100% online Postgraduate Certificate will allow you to balance your studies with your professional work while increasing your knowledge in this field.

The teaching staff includes a team of professionals from the field of design, who bring their experience to this specialization program, as well as renowned specialists from leading societies and prestigious universities.

Its 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 an immersive education programmed to learn in real situations.

The design of this program focuses on Problem-Based Learning, by means of which the professionals must try to solve the different professional practice situations that are presented throughout the program. For this purpose, the professional will be assisted by an innovative interactive video system developed by renowned and experienced experts in Artificial Intelligence.

02

Objectives

The Postgraduate Certificate in Introduction to Artificial Intelligence is designed to facilitate the performance of the professionals in this field.

This is the best option to learn about the latest advances in Introduction to Artificial Intelligence"

General Objective

- Prepare scientifically and technologically, as well as to develop the professional practice in the field of Artificial Intelligence, with a transversal and versatile approach adapted to the new technologies and innovations in this field

A unique, key, and decisive educational experience to boost your professional development"

Specific Objectives

- Lay the foundations of Artificial Intelligence and Knowledge Engineering, making a brief tour through the history of Artificial Intelligence up to the present day
- Understand the essential concepts of search in Artificial Intelligence, both informed and uninformed search
- Understand how Artificial Intelligence works in games
- Learn the fundamental concepts of neural networks and the use of genetic algorithms
- Acquire the appropriate mechanisms to represent knowledge, especially taking into account the semantic web
- Understand the functioning of expert systems and decision support systems

03

Structure and Content

The structure of the contents has been designed by the best professionals in the field of Artificial Intelligence with extensive experience and recognized prestige in the profession.

We have the most complete and up-to-date educational program on the market. We strive for excellence and for you to achieve it too"

Module 1. Artificial Intelligence and Knowledge Engineering

1.1. Introduction to Artificial Intelligence and Knowledge
- 1.1.1. Brief History of Artificial Intelligence
- 1.1.2. Artificial Intelligence Today
- 1.1.3. Knowledge Engineering

1.2. Searching
- 1.2.1. Common Search Concepts
- 1.2.2. Uninformed Search
- 1.2.3. Informed Search

1.3. Boolean Satisfiability, Constraint Satisfiability and Automatic Planning
- 1.3.1. Boolean Satisfiability
- 1.3.2. Constraint Satisfiability Problems
- 1.3.3. Automatic Planning and PDDL
- 1.3.4. Planning as a Heuristic Search
- 1.3.5. Planning with SAT

1.4. Artificial Intelligence in Games
- 1.4.1. Game Theory
- 1.4.2. Minimax and Alpha-Beta Pruning
- 1.4.3. Simulation: Monte Carlo

1.5. Supervised and Unsupervised Learning
- 1.5.1. Introduction to Machine Learning
- 1.5.2. Classification
- 1.5.3. Regression
- 1.5.4. Validation of Results
- 1.5.5. Clustering

1.6. Neural Networks
- 1.6.1. Biological Fundamentals
- 1.6.2. Computational Model
- 1.6.3. Supervised and Unsupervised Neural Networks
- 1.6.4. Simple Perceptron
- 1.6.5. Multilayer Perceptron

1.7. Genetic Algorithms
- 1.7.1. History
- 1.7.2. Biological Basis
- 1.7.3. Problem Coding
- 1.7.4. Generation of the Initial Population
- 1.7.5. Main Algorithm and Genetic Operators
- 1.7.6. Evaluation of Individuals: Fitness

1.8. Thesauri, Vocabularies, Taxonomies
- 1.8.1. Vocabulary
- 1.8.2. Taxonomy
- 1.8.3. Thesauri
- 1.8.4. Ontologies

1.9. Knowledge Representation: Semantic Web
- 1.9.1. Semantic Web
- 1.9.2. Specifications: RDF, RDFS and OWL
- 1.9.3. Inference/ Reasoning
- 1.9.4. Linked Data

1.10. Expert systems and DSS
- 1.10.1. Expert Systems
- 1.10.2. Decision Support Systems

This program will allow you to advance in your career comfortably"

04

Methodology

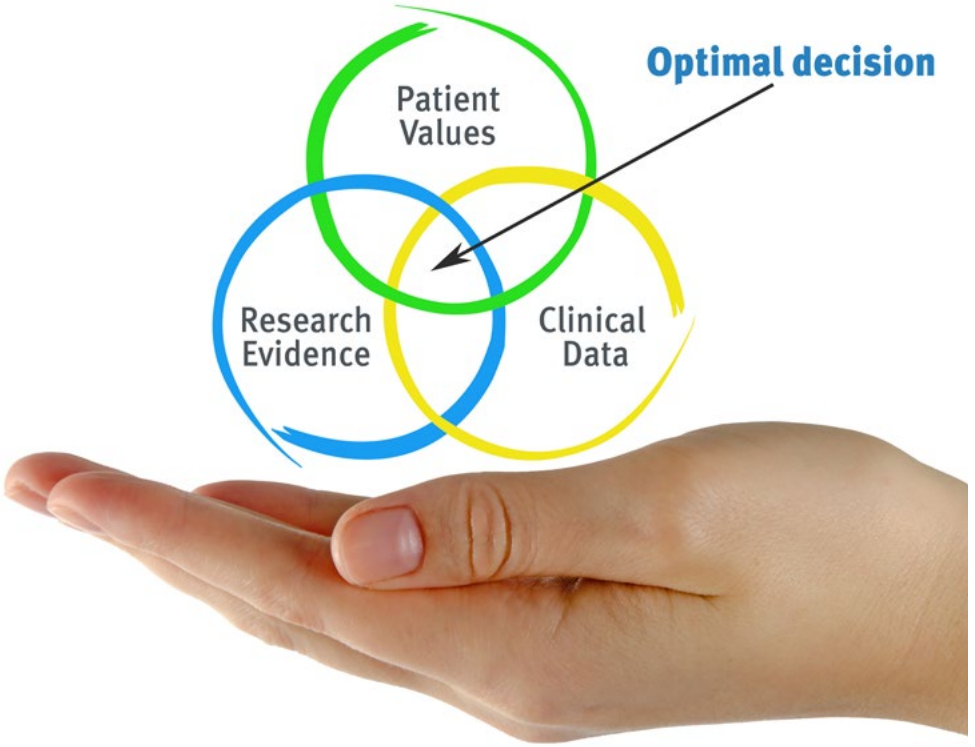
This academic program offers students a different way of learning. Our methodology uses a cyclical learning approach: Relearning.
This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the New England Journal of Medicine have considered 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 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.

Relearning Methodology

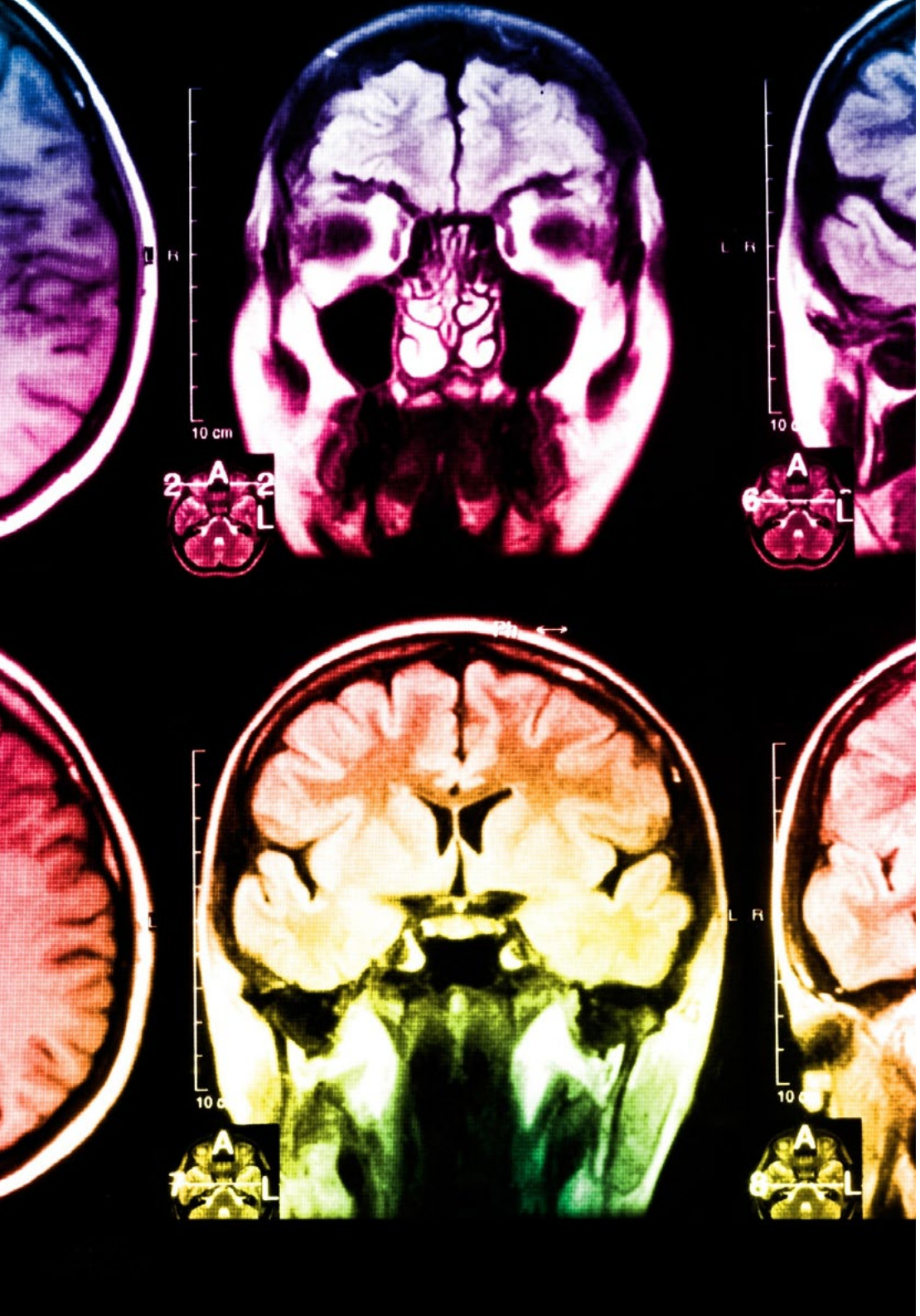
TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines different teaching elements in each lesson.

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.



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.

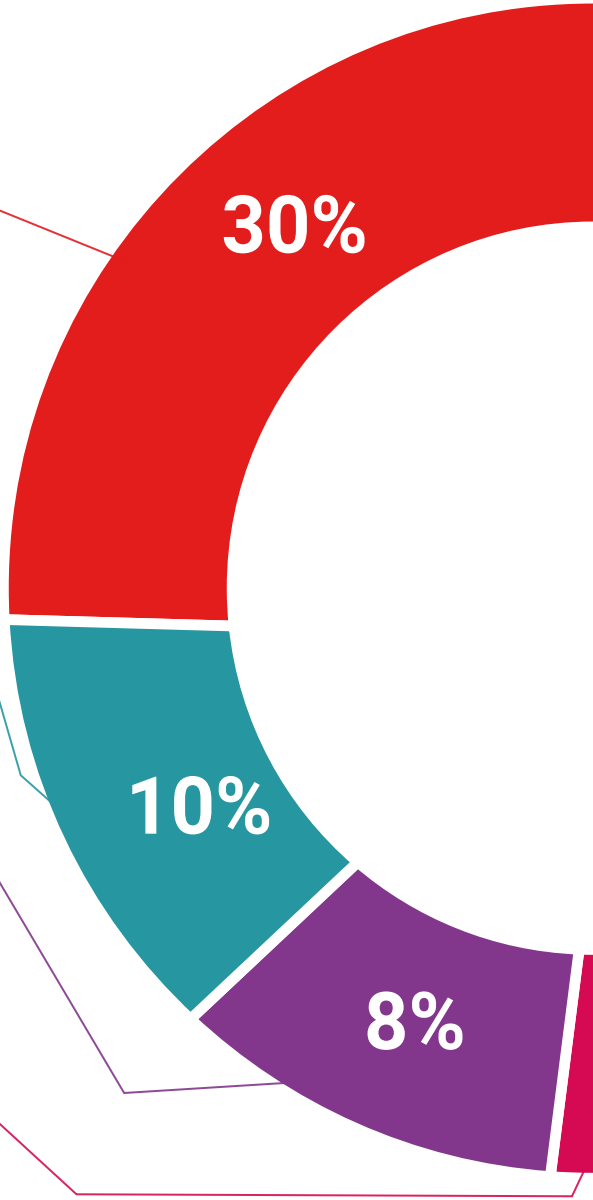
Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

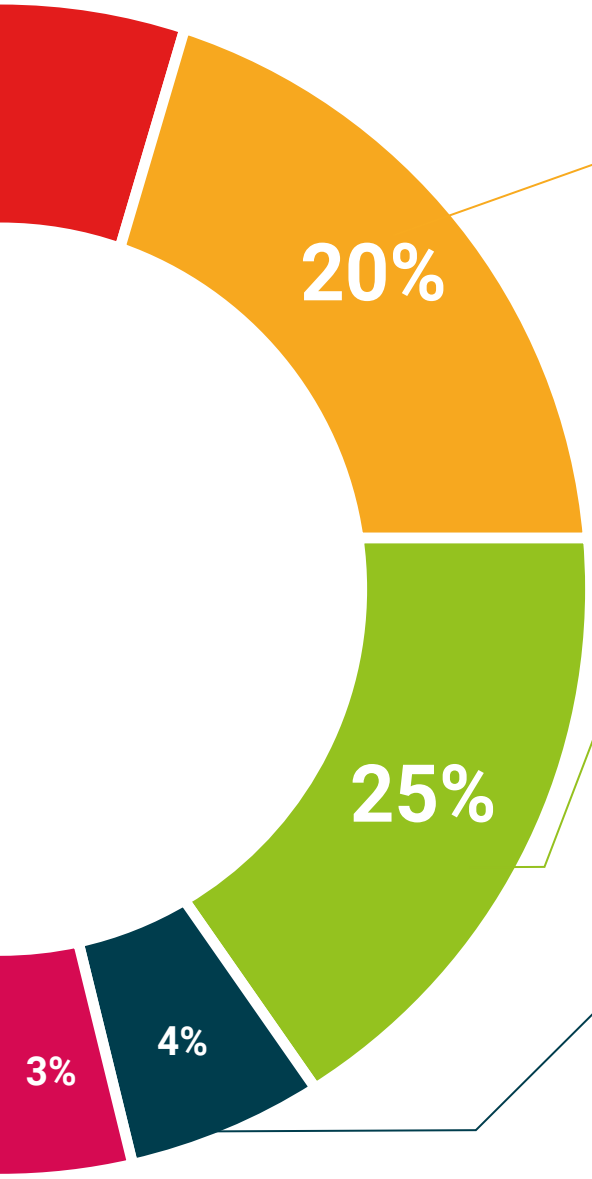
Practising Skills and Abilities

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.

05

Certificate

The Postgraduate Certificate in Introduction to Artificial Intelligence 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 Postgraduate Certificate without having to travel or fill out laborious paperwork"

This private qualification will allow you to obtain an **Postgraduate Certificate in Introduction to Artificial Intelligence** 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 Introduction to Artificial Intelligence**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**

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

Postgraduate Certificate in Introduction to Artificial Intelligence

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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