Postgraduate Certificate

Assisted Development of Software Applications using Artificial Intelligence

tech global university

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Postgraduate Certificate
Assisted Development of Software Applications using 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/assisted-development-software-applications-artificial-intelligence

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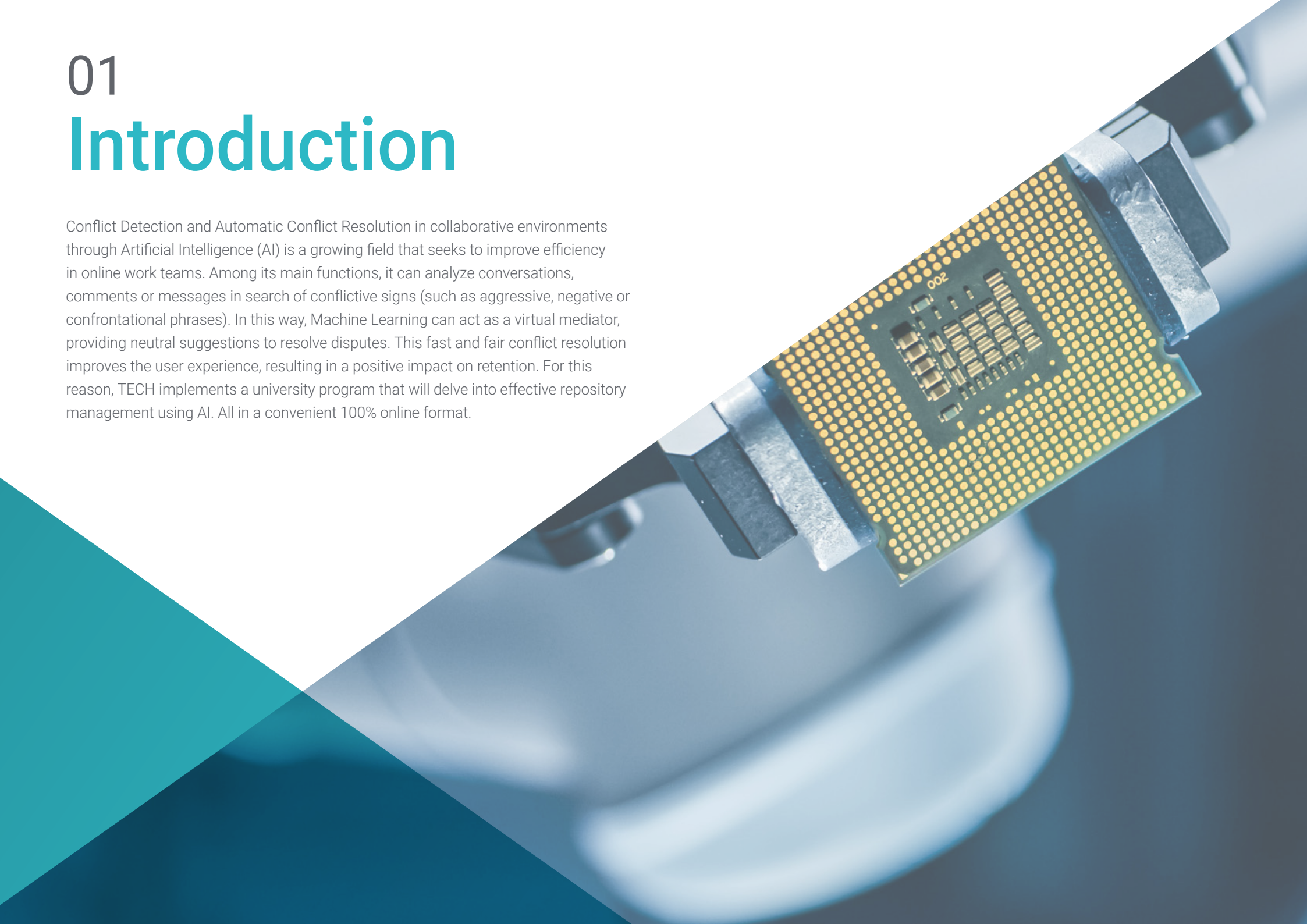
01

Introduction

Conflict Detection and Automatic Conflict Resolution in collaborative environments through Artificial Intelligence (AI) is a growing field that seeks to improve efficiency in online work teams. Among its main functions, it can analyze conversations, comments or messages in search of conflictive signs (such as aggressive, negative or confrontational phrases). In this way, Machine Learning can act as a virtual mediator, providing neutral suggestions to resolve disputes. This fast and fair conflict resolution improves the user experience, resulting in a positive impact on retention. For this reason, TECH implements a university program that will delve into effective repository management using AI. All in a convenient 100% online format.



Manage the adaptation of machine translation algorithms at the best digital university in the world according to Forbes"

Assisted Software Application Development using Machine Learning is an approach aimed at optimizing the process of creating computer programs. The importance of this technology lies in several key benefits it brings to application development. For example, it is able to automate repetitive or tedious tasks in the execution of applications. This frees developers from routine tasks and allows them to focus on more strategic aspects of the project. In addition, AI tools are used to locate and fix bugs faster, which significantly reduces the time required to bring programs to market.

In this context, TECH has created a revolutionary program for Computer Science experts that will offer the keys to improve productivity in Software Development with AI. Designed by experts in the field, the syllabus will delve into the most important extensions for Visual Studio Code, which will allow graduates to customize development environments to improve efficiency. At the same time, the syllabus will analyze in detail the management of repositories, covering from the automation of technical version control processes to the integration of AI in database management. The specialization will also provide the most innovative tools for automatic translation for the different programming languages.

One of the advantages of being part of this unique academic opportunity is based on the convenience and adaptability provided. TECH is a pioneer in the implementation of the *Relearning*pedagogical methodology, which provides didactic and multimedia content repeatedly to expand and improve the assimilation of concepts. All of this is complemented with case studies refuted by the best experts in the field. It is therefore the perfect opportunity to combine learning with personal life.

This **Postgraduate Certificate in Assisted Development of Software Applications using Artificial Intelligence** contains the most complete and up-to-date educational program on the market. The most important features include:

- Development of practical cases presented by experts in Artificial Intelligence in Programming
- The graphic, schematic and eminently practical contents with which it is conceived gather scientific and practical information on those disciplines that are indispensable 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

You will master the most advanced Artificial Intelligence tools to improve productivity"

You will integrate improvements in communication and collaboration among developers with GitHub Copilot"

You will perform early detection of vulnerabilities and bugs using Static Analysis.

Thanks to the Relearning system used by TECH you will reduce the long hours of study and memorization.

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 course. For this purpose, students will be assisted by an innovative interactive video system created by renowned and experienced experts.

02

Objectives

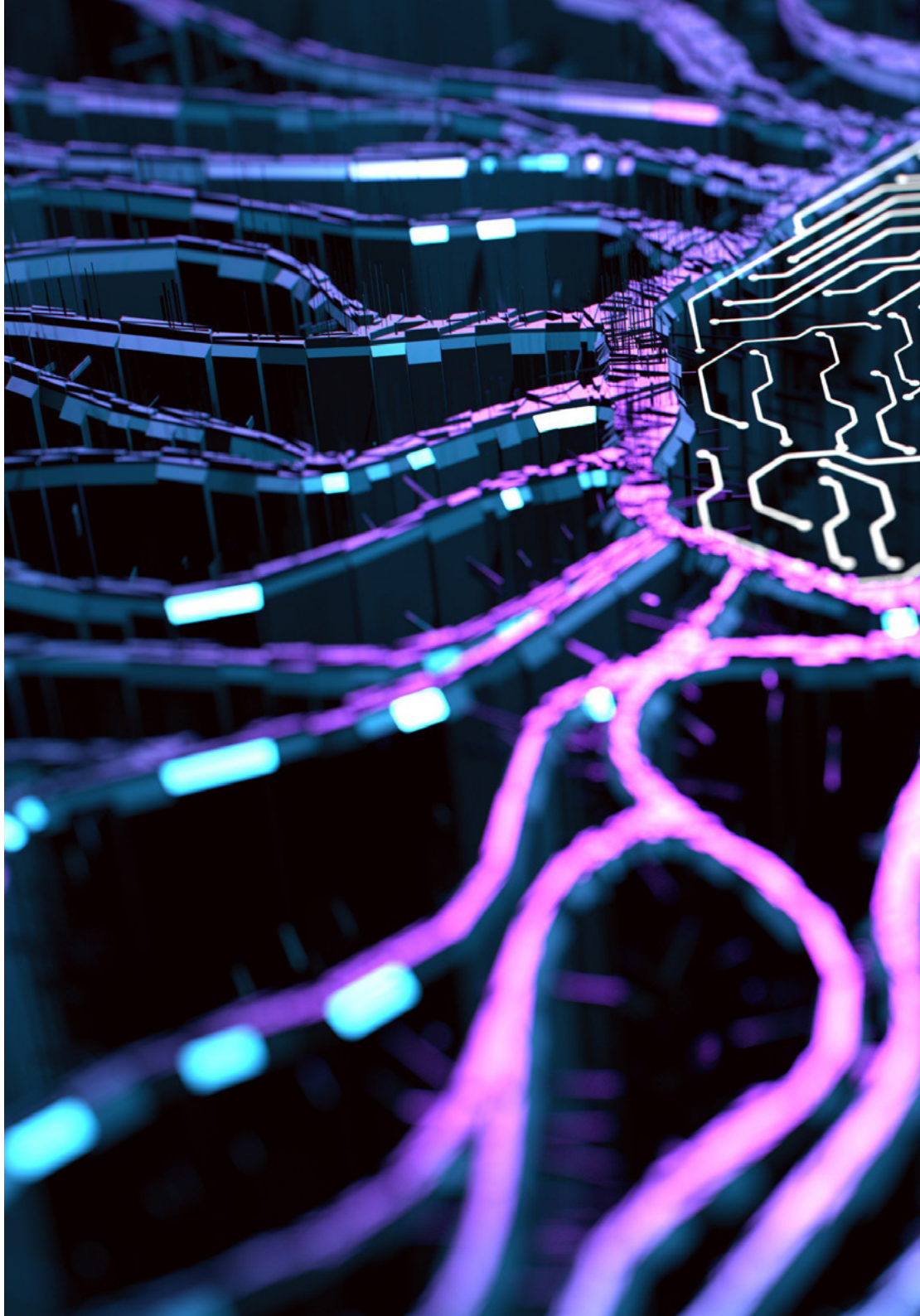
Upon completion of this specialization, graduates will master the configuration of software development environments using Machine Learning tools. Therefore, experts will apply the most advanced extensions in Visual Studio Code to improve the productivity of the programs. In addition, professionals will have a solid understanding of ChatGPT, which will enable them to implement its techniques in order to identify possible code improvements. In this way, specialists will drive more efficient programming practices and will be empowered to successfully deal with challenges that arise during their internships.

A complete and current syllabus configured as a high qualification tool of exceptional quality"

General Objectives

- Develop skills to configure and manage efficient development environments, ensuring a solid foundation for the implementation of AI projects
- Acquire skills in planning, executing and automating quality testing, incorporating AI tools for bug detection and correction
- Understand and apply performance, scalability and maintainability principles in the design of large-scale computing systems
- Become familiar with the most important design patterns and apply them effectively in software architecture

With the best rated learning assistance methods in online teaching, this Postgraduate Certificate will allow you to learn in a fluent, constant and efficient way"



Specific Objectives

- Delve into the implementation of must-have AI extensions in Visual Studio Code to improve productivity and facilitate software development
- Gain a solid understanding of basic AI concepts and their application in software development, including machine learning algorithms, natural language processing, neural networks, etc.
- Master the configuration of optimized development environments, ensuring that students are able to create environments conducive to AI projects
- Apply specific techniques using ChatGPT for the automatic identification and correction of potential code improvements, encouraging more efficient programming practices
- Promote collaboration between professionals from different programmers (from programmers to data engineers to user experience designers) to develop effective and ethical AI software solutions

03

Course Management

In line with its philosophy of providing the highest quality education, TECH offers students a first class teaching staff. These experts have a solid knowledge of the most innovative techniques in Assisted Development of Software Applications using AI. For this reason, the syllabus that makes up this program will offer graduates contents characterized by their high quality. In this way, they will have the guarantees they need to specialize at an international level in a professional field that offers numerous opportunities.

The diversity of talents and knowledge of the teaching staff will create a dynamic learning environment. Specialize with the best!"

Management

Dr. Peralta Martín-Palomino, Arturo

- CEO and CTO at Prometeus Global Solutions
- CTO at Korporate Technologies
- CTO at AI Shephers 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 the University of Castilla La Mancha
- Master in Executive MBA from Universidad Isabel I
- 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: SMILE Research Group

Mr. Castellanos Herreros, Ricardo

- Chief Technology Officer at OWQLO
- Specialist in Computer Systems Engineering and Machine Learning Engineer
- Freelance Technical Consultant
- Mobile Application Developer for eDreams, Fnac, Air Europa, Bankia, Cetelem, Banco Santander, Santillana, Groupón and Grupo Planeta
- Web Developer for Openbank and Banco Santander.
- Technical Engineer in Computer Systems from the University of Castilla la Mancha

04

Structure and Content

This program will provide computer scientists with a holistic view of the configuration of the software development environment using AI. To achieve this, the syllabus will delve into repository management by combining elements in Visual Studio Code and ChatGPT. This will allow students to perform predictive analysis of changes, to implement improvements in the organization. Likewise, the syllabus will analyze the design of the No-code User Interfaces in order to optimize productivity in the projects. In this sense, graduates will improve interoperability between different languages through automatic translation.

A unique, key and decisive specialization experience that will boost your professional development in just 6 weeks"

Module 1. Software Development Productivity Improvement with AI

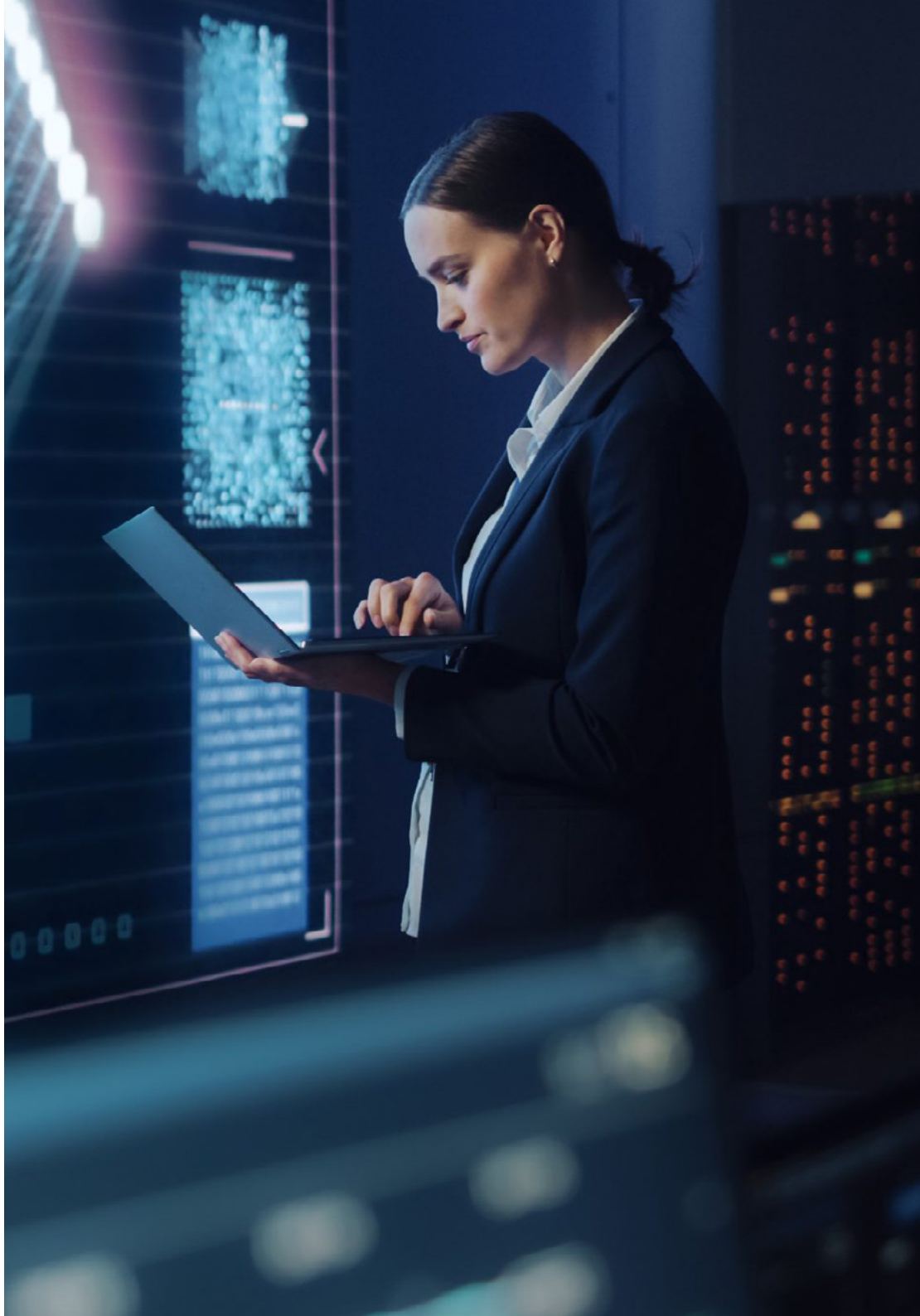
1.1. Preparing a Suitable Development Environment
- 1.1.1. Essential Tools selection for AI Development
- 1.1.2. Configuration of the Selected Tools
- 1.1.3. Implementation of CI/CD Pipelines Adapted to AI Projects
- 1.1.4. Efficient Management of Dependencies and Versions in Development Environments

1.2. Essential AI Extensions for Visual Studio Code
- 1.2.1. Exploring and Selecting AI Extensions for Visual Studio Code
- 1.2.2. Integrating Static and Dynamic Analysis Tools into the Integrated Development Environment (IDE)
- 1.2.3. Automation of Repetitive Tasks with Specific Extensions
- 1.2.4. Customization of the Development Environment to Improve Efficiency

1.3. No-Code Design of User Interfaces with AI Elements
- 1.3.1. No-Code Design Principles and their Application to User Interfaces
- 1.3.2. Incorporation of AI Elements in Visual Interface Design
- 1.3.3. Tools and Platforms for the No-Code Creation of Intelligent Interfaces
- 1.3.4. Evaluation and Continuous Improvement of No-code Interfaces with AI

1.4. Code Optimization Using ChatGPT
- 1.4.1. Duplicate Code Detection
- 1.4.2. Refactor
- 1.4.3. Create Readable Code
- 1.4.4. Understanding What Code Does
- 1.4.5. Improving Variable and Function Naming
- 1.4.6. Creating Automatic Documentation

1.5. Repository Management with AI
- 1.5.1. Automation of Version Control Processes with AI Techniques
- 1.5.2. Conflict Detection and Automatic Resolution in Collaborative Environments
- 1.5.3. Predictive Analysis of Changes and Trends in Code Repositories
- 1.5.4. Improvements in the Organization and Categorization of Repositories using AI



1.6. Integration of AI in Database Management
- 1.6.1. Optimization of Queries and Performance Using AI Techniques
- 1.6.2. Predictive Analysis of Database Access Patterns
- 1.6.3. Implementation of Recommender Systems to Optimize Database Structure
- 1.6.4. Proactive Monitoring and Detection of Potential Database Problems

1.7. Fault Detection and Creation of Unit Tests with AI ChatGPT
- 1.7.1. Automatic Generation of Test Cases using AI Techniques
- 1.7.2. Early Detection of Vulnerabilities and Bugs using Static Analysis with AI
- 1.7.3. Improving Test Coverage by Identifying Critical Areas by AI

1.8. Pair Programming with GitHub Copilot
- 1.8.1. Integration and Effective Use of GitHub Copilot in Pair Programming Sessions
- 1.8.2. Integration Improvements in Communication and Collaboration among Developers with GitHub Copilot
- 1.8.3. Integration Strategies to Maximize the Use of GitHub Copilot-Generated Code suggestions
- 1.8.4. Integration Case Studies and Best Practices in AI-Assisted Pair Programming

1.9. Automatic Translation between Programming Languages ChatGPT
- 1.9.1. Specific Machine Translation Tools and Services for Programming Languages
- 1.9.2. Adaptation of Machine Translation Algorithms to Development Contexts
- 1.9.3. Improvement of Interoperability between Different Languages by Machine Translation
- 1.9.4. Assessment and Mitigation of Potential Challenges and Limitations in Machine Translation

1.10. Recommended AI Tools to Improve Productivity
- 1.10.1. Comparative Analysis of AI Tools for Software Development
- 1.10.2. Integration of AI Tools in Workflows.
- 1.10.3. Automation of Routine Tasks with AI Tools
- 1.10.4. Evaluation and Selection of Tools Based on Project Context and Requirements

Enjoy the most up-to-date educational content available in innovative multimedia formats to optimize your studies"

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 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

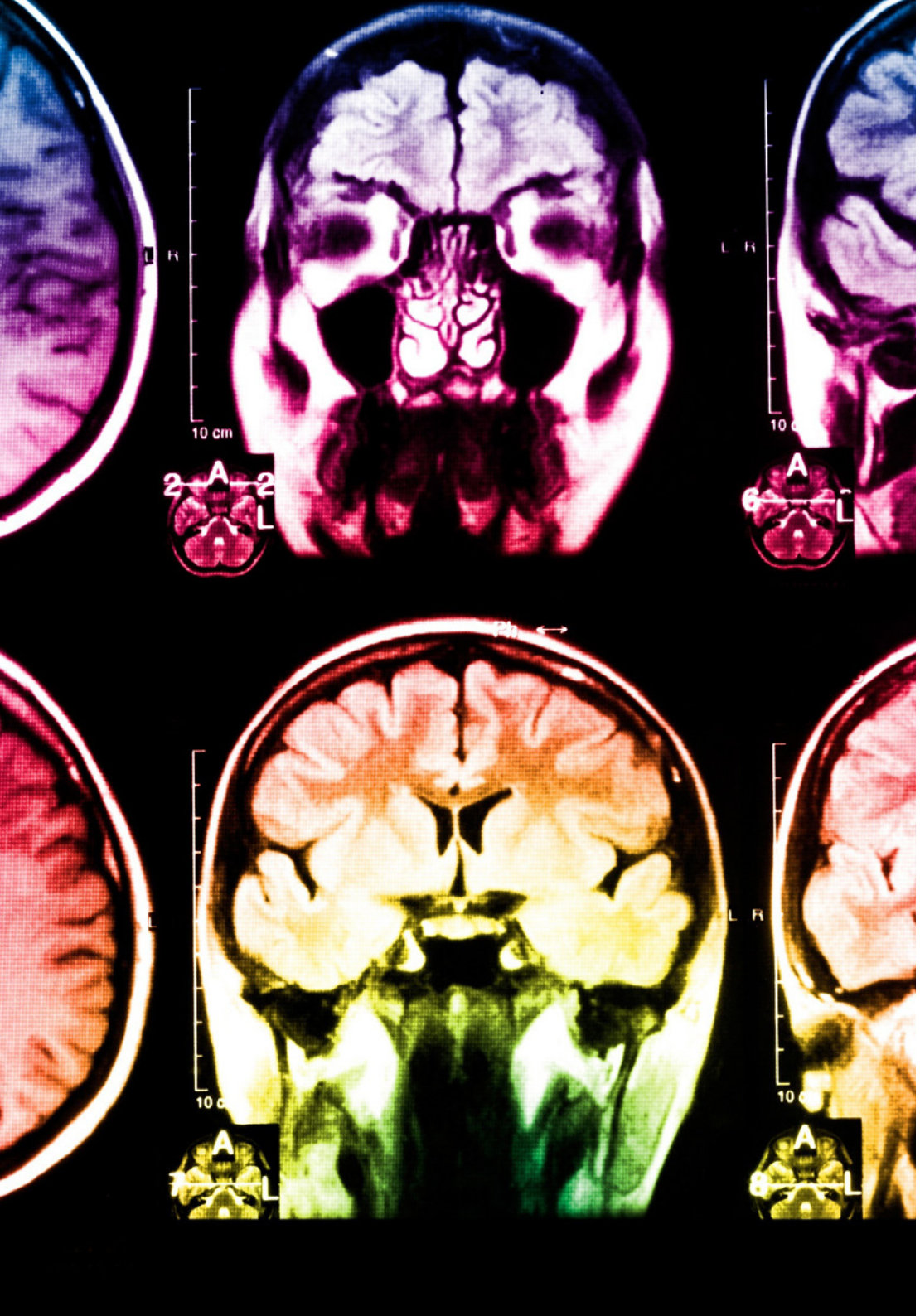
TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines different teaching elements in each lesson.

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.

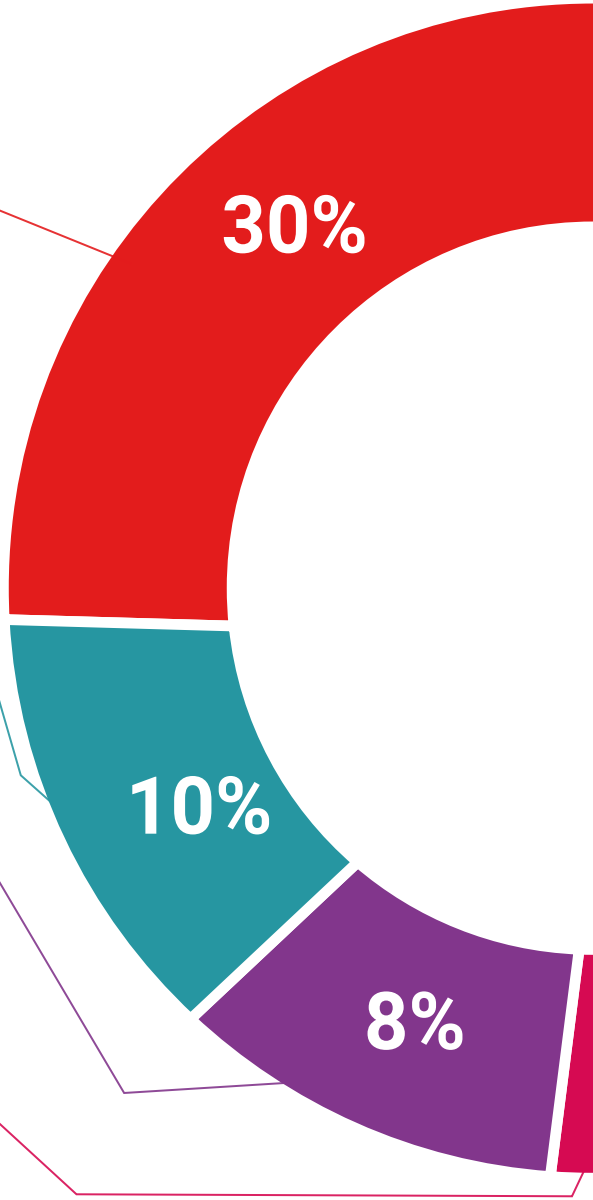
Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

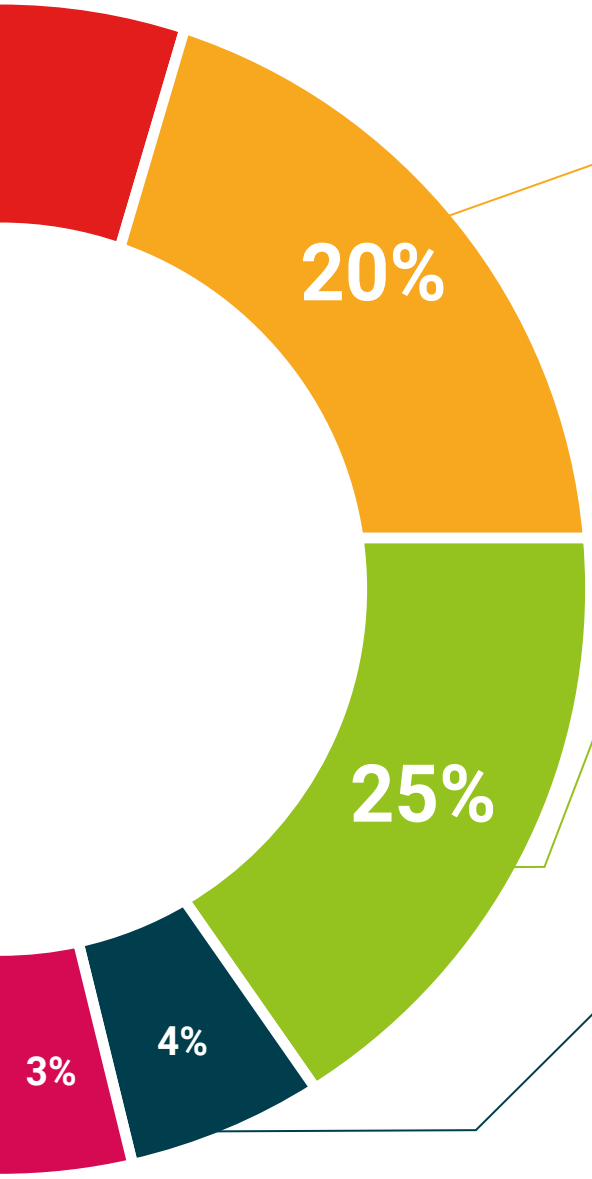
Practising Skills and Abilities

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.

06

Certificate

The Postgraduate Certificate in Assisted Development of Software Applications using 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 university qualification without having to travel or fill out laborious paperwork"

This private qualification will allow you to obtain a **Postgraduate Certificate in Assisted Development of Software Applications using 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 Assisted Development of Software Applications using Artificial Intelligence**

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 Assisted Development of Software Applications using 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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