Postgraduate Certificate

Assisted Development of Software Applications using Artificial Intelligence

tech technological university

tech technological university

Postgraduate Certificate
Assisted Development of Software Applications using Artificial Intelligence

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

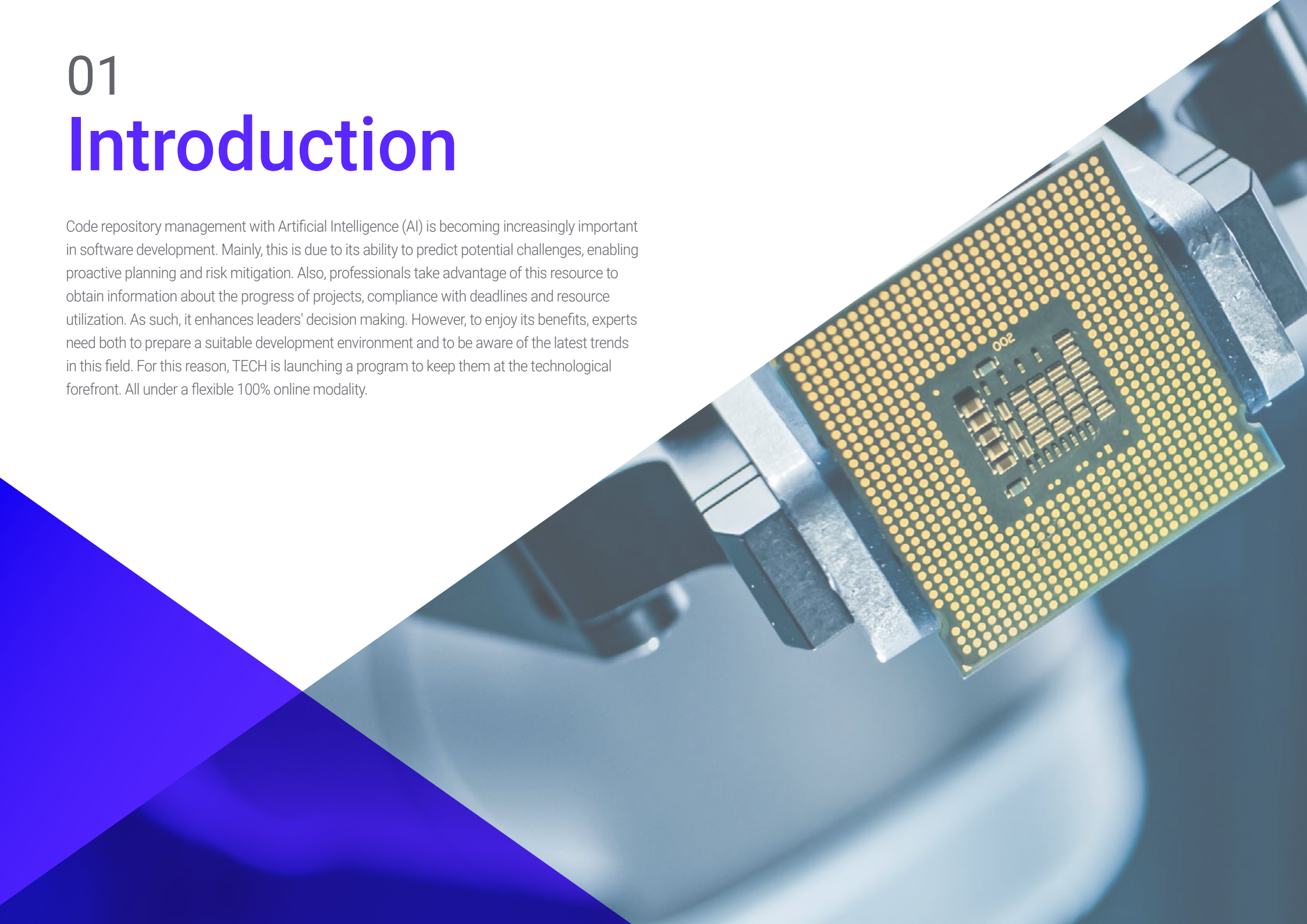
Website: **www.techtitute.com/us/artificial-intelligence/postgraduate-certificate/assisted-development-software-applications-artificial-intelligence**

Index

01

Introduction

Code repository management with Artificial Intelligence (AI) is becoming increasingly important in software development. Mainly, this is due to its ability to predict potential challenges, enabling proactive planning and risk mitigation. Also, professionals take advantage of this resource to obtain information about the progress of projects, compliance with deadlines and resource utilization. As such, it enhances leaders' decision making. However, to enjoy its benefits, experts need both to prepare a suitable development environment and to be aware of the latest trends in this field. For this reason, TECH is launching a program to keep them at the technological forefront. All under a flexible 100% online modality.



This university program gives you the opportunity to update your skills in Artificial Intelligence with the highest scientific rigor and from a leading technological institution"

Among the most common software development practices, the combination of Pai *Programming* with GitHub Copilot stands out. In this way, two programmers work together while one teaches and guides the other. For example, the more experienced programmers can provide the others with code suggestions to transfer their knowledge. Similarly, when two computer scientists work simultaneously, they ensure a higher level of productivity in less time. However, to use these tools effectively, experts require a deep understanding of how they work.

To help them with this task, TECH is developing an innovative program that will delve into the most cutting-edge mechanisms for improving productivity in AI *software* development. Under the supervision of an experienced faculty, the curriculum will delve into code optimization using the state-of-the-art ChatGPT application. At the same time, the didactic materials will analyze the main extensions of Machine Learning for Visual Studio Code. The program will also focus on the integration of Computerized Systems with databases, thus allowing students to securely store user information.

During the 6 weeks of this course, the teaching team will guide the students and solve all the doubts that may arise during the learning process. In this way, through a convenient 100% online modality, TECH favors the learning of professionals who wish to combine their work and personal life. Supported by the *Relearning* system, based on the reiteration of content, and a platform with extensive multimedia content (including interactive summaries, infographics and motivational videos), students will acquire the knowledge and skills they need to be successful in their careers. In this way, graduates will be able to take advantage of all the opportunities offered by a booming and constantly expanding IT industry.

This **Postgraduate Certificate in Assisted Development of Software Applications using Artificial Intelligence** 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 Artificial Intelligence in programming
- 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 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 be able to manage large-scale databases and store them securely at all times after completing this Postgraduate Certificate"

You will be able to handle the most effective Machine Learning systems to detect failures and find highly creative solutions”

All this, in a 100% online education, without fixed schedules and with the syllabus available from the first day. Set your own learning pace!"

You will reinforce your key knowledge through the innovative Relearning methodology for an effective assimilation of the subject.

The program’s teaching staff includes professionals from the sector who contribute their work experience to this 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

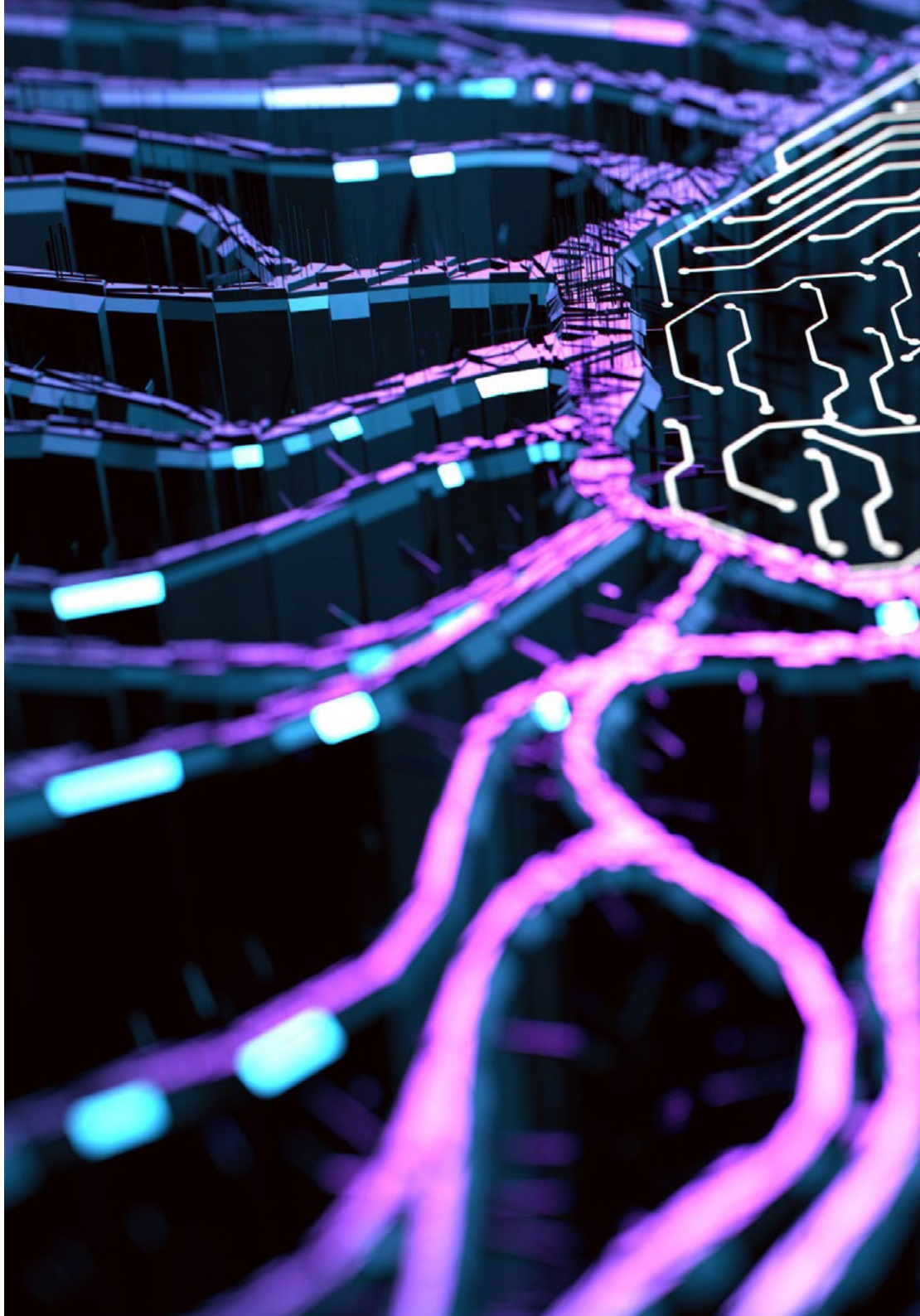
With this educational experience, graduates will master the configuration of software development environments using Machine Learning resources. In this sense, professionals will implement the most profitable extensions in Visual Studio Code and will improve the productivity of computer applications. In addition, the specialists will have a broad knowledge of ChatGPT, so they will apply their techniques to identify possible improvements in the codes. In this way, students will promote more efficient programming practices, while being prepared to successfully overcome any professional challenges that arise during the development of their respective functions.

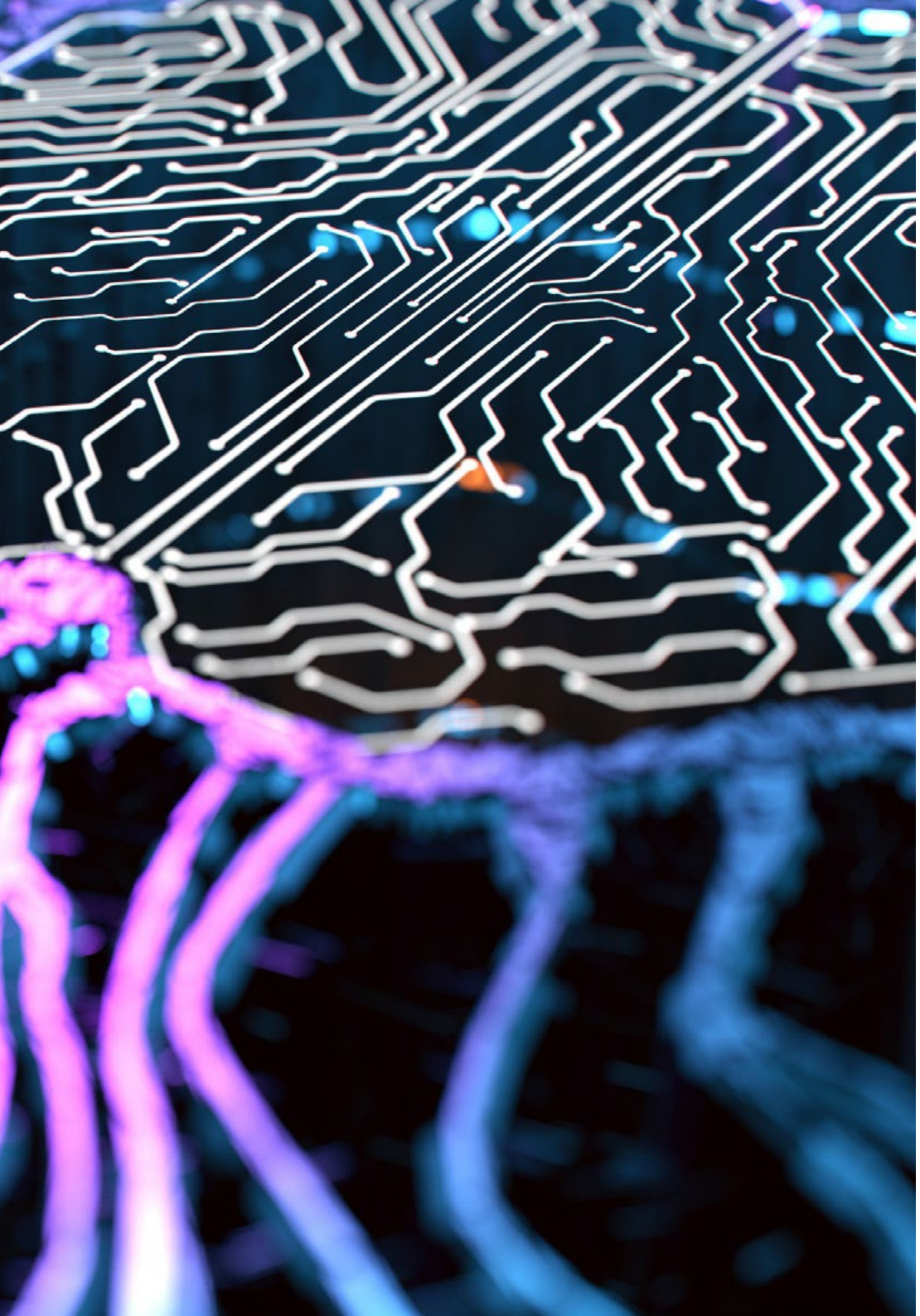
You will specialize in a technological sector that demands highly qualified personnel and you will join the most prestigious IT institutions”

General Objectives

- Develop skills to set up and manage efficient development environments, ensuring a solid foundation for the implementation of AI projects
- Acquire skills in planning, executing and automating quality tests, incorporating AI tools for bugdetection and remediation
- 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

Do you want to master the most advanced technologies for the automatic translation of different programming languages? Do it with this 6-week program"





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 setup of optimized development environments, ensuring that students are able to create environments conducive to AI projects
- Apply specific techniques using ChatGPT for automatic identification and correction of potential code improvements, encouraging more efficient programming practices
- Promote collaboration between different programming professionals (from programmers to data engineers to user experience designers) to develop effective and ethical AI software solutions

03

Course Management

TECH offers quality education within everyone's reach, thanks to a rigorous selection of the teaching staff that make up its specializations. In this Postgraduate Certificate, students will have at their disposal active professionals immersed in *software* development with AI. The experience and the high academic level of the teachers support the teachings that the computer scientists will receive. Throughout the 6 weeks of this program, students will receive tutoring from the faculty, to achieve their goals in a technology sector on the rise.

The teaching staff of this program has a wide trajectory of research and professional application Artificial Intelligence Software Development"

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
- Ph.D. in Psychology from the University of Castilla - La Mancha
- Ph.D. in Economics, Business and Finance from the Camilo José Cela University
- Ph.D. in Psychology from University of Castilla – La Mancha
- Master's in Executive MBA por la 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

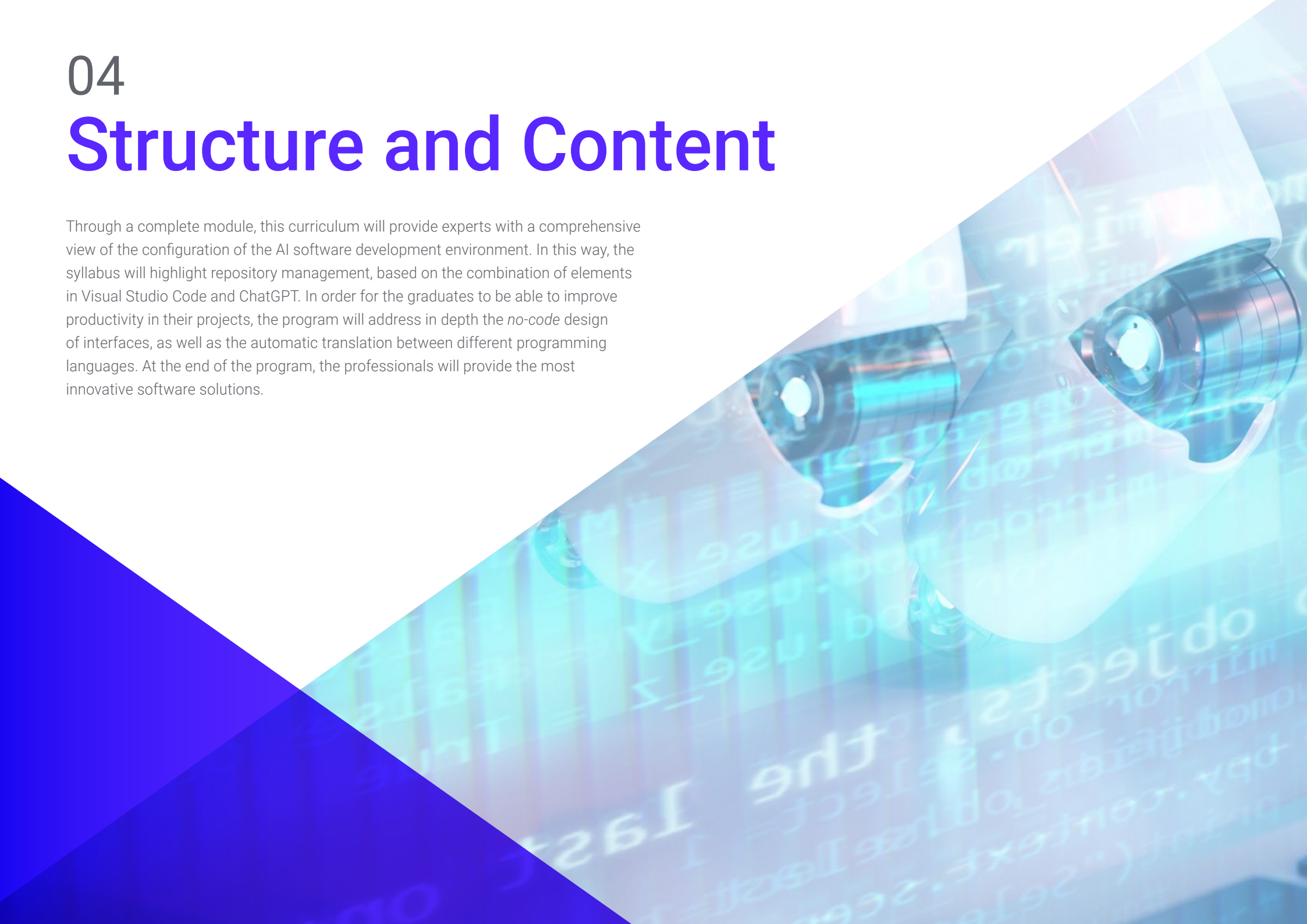
Mr. Castellanos Herreros, Ricardo

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

04

Structure and Content

Through a complete module, this curriculum will provide experts with a comprehensive view of the configuration of the AI software development environment. In this way, the syllabus will highlight repository management, based on the combination of elements in Visual Studio Code and ChatGPT. In order for the graduates to be able to improve productivity in their projects, the program will address in depth the *no-code* design of interfaces, as well as the automatic translation between different programming languages. At the end of the program, the professionals will provide the most innovative software solutions.



TECH presents a unique program that will help you, in just 6 weeks, to make a leap in your profession"

Module 1. Improving Software Development Productivity with AI

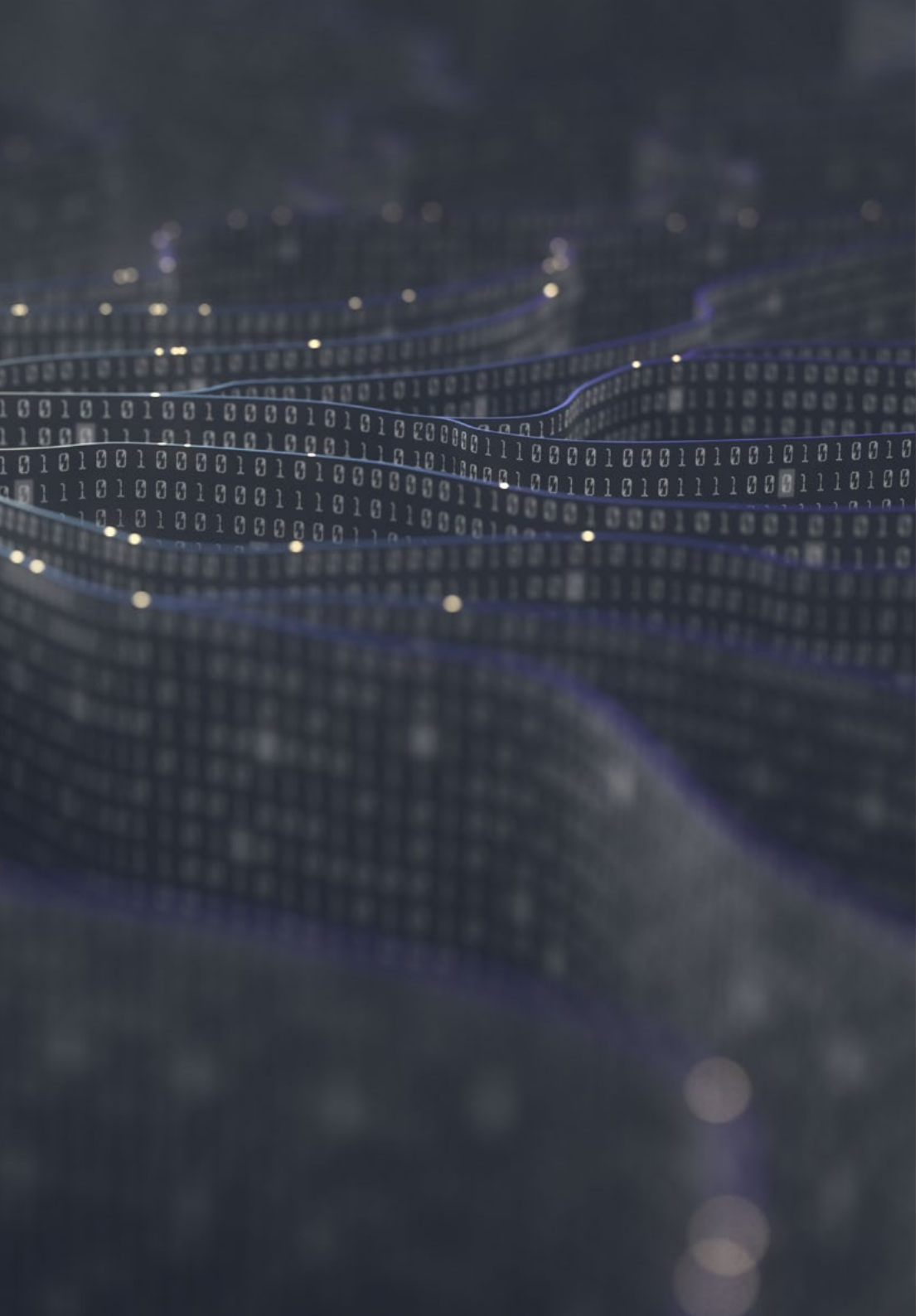
1.1. Prepare a Suitable Development Environment
- 1.1.1. Selection of Essential Tools for AI Development
- 1.1.2. Configuration of the Chosen Tools
- 1.1.3. Implementation of CI/CD Ppipelines Adapted to AI Projects
- 1.1.4. Efficient Management of Dependencies and Versions in Development Environments

1.2. Essential AI Extensions for Visual Studio Code
- 1.2.1. Exploring and Selecting AI Extensions for Visual Studio Code
- 1.2.2. Integration of Static and Dynamic Analysis Tools in the SDI
- 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 the Visual Design of Interfaces
- 1.3.3. Tools and Platforms for 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. Identifying Duplicate Code
- 1.4.2. Refactor
- 1.4.3. Create Readable Code
- 1.4.4. Understanding What Code Does
- 1.4.5. Improving Variable and Function Names
- 1.4.6. Automatic Documentation Creation

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. Improved Organization and Categorization of Repositories using AI



1.6. Integration of AI in Database Management
- 1.6.1. Query and Performance Optimization 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. Monitoring and Proactive Detection of Potential Problems in Databases

1.7. Fault Finding and Creation of Unit Tests with AI
- 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 with AI

1.8. Pair Programming with GitHub Copilot
- 1.8.1. Integration and Effective Use of GitHub Copilot in Pair ProgrammingSessions
- 1.8.2. Integration Improvements in Communication and Collaboration between Developers with GitHub Copilot
- 1.8.3. Integration Strategies for Making the Most of Code Hints Generated by GitHub Copilot
- 1.8.4. Integration Case Studies and Best Practices in AI-assisted Pair Programming

1.9. Automatic Translation between Programming Languages
- 1.9.1. Programming Language Specific Machine Translation Tools and Services
- 1.9.2. Adapting Machine Translation Algorithms to Development Contexts
- 1.9.3. Improving Interoperability between Different Languages by Machine Translation
- 1.9.4. Assessing and Mitigating Potential Challenges and Limitations of 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. Evaluating and Selecting Tools Based on Context and Project Requirements

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

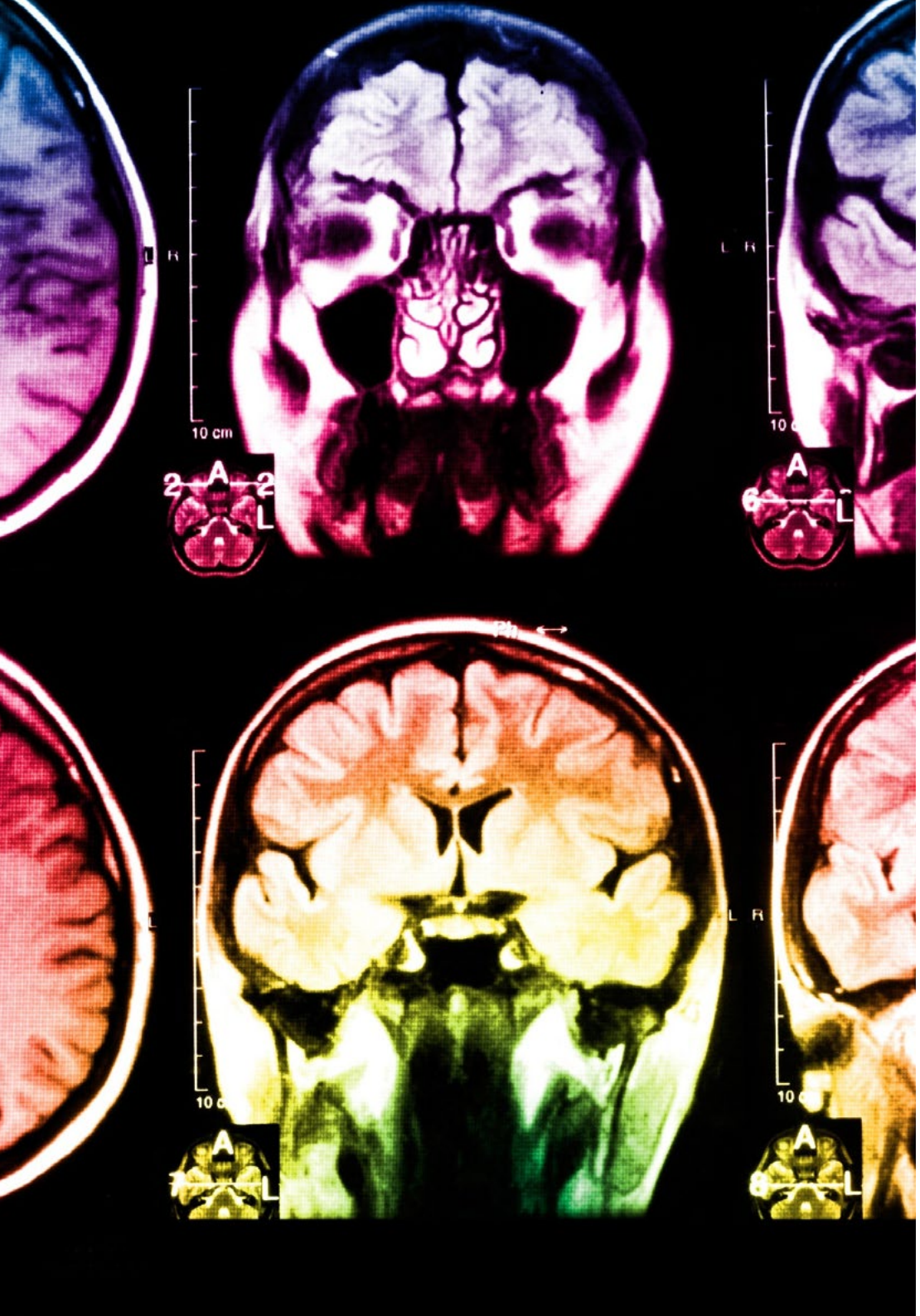
TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines different teaching elements in each lesson.

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.

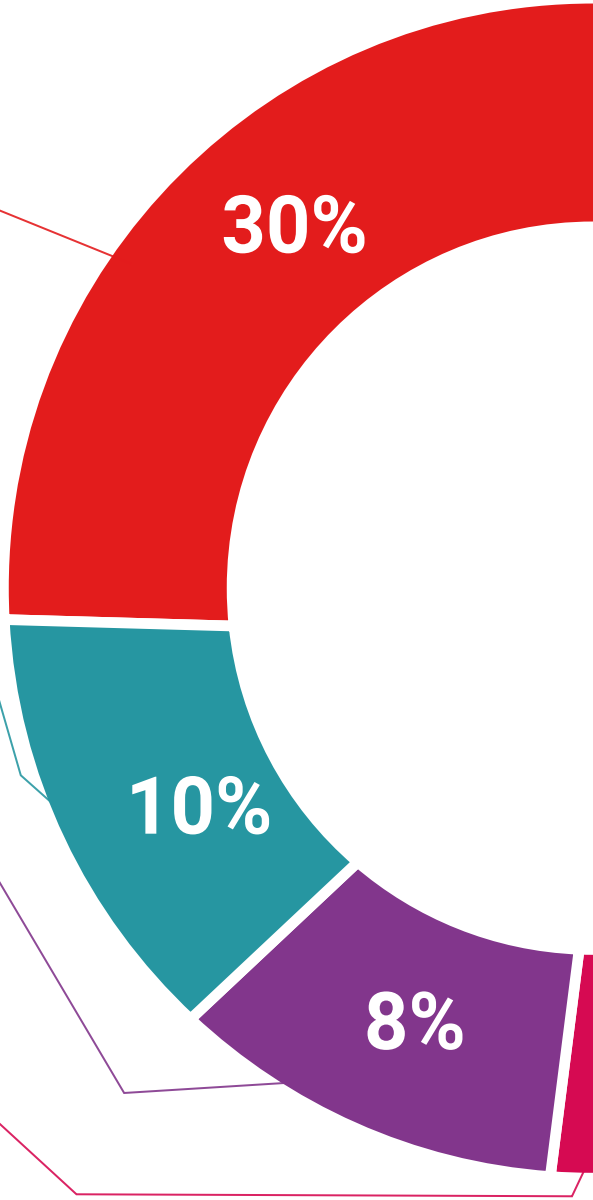
Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

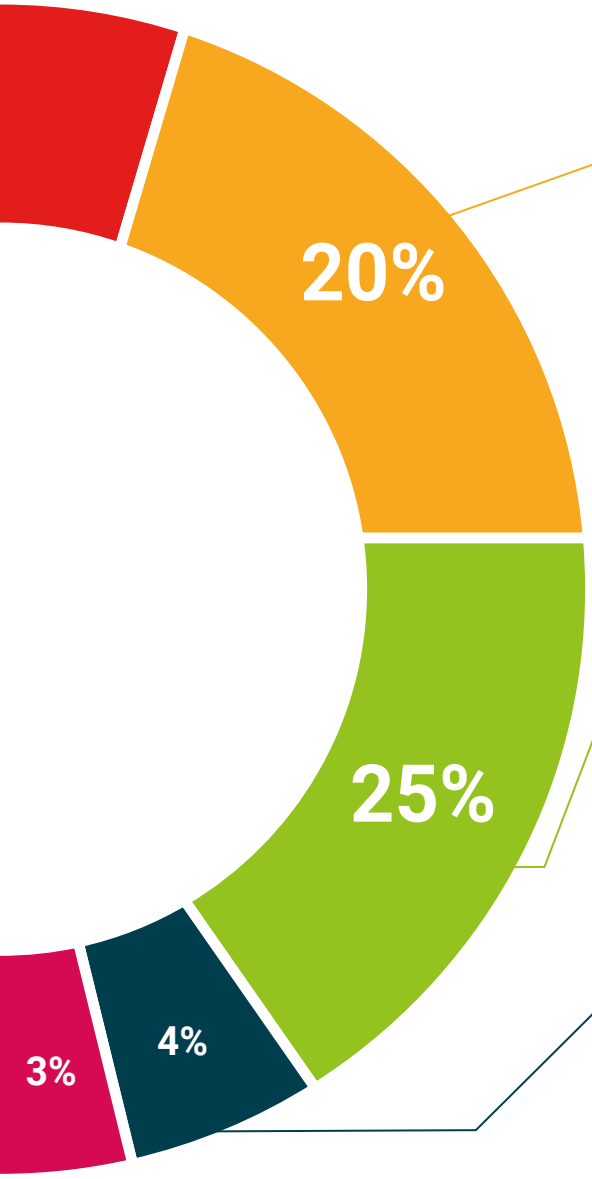
Practising Skills and Abilities

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 Technological University.

Successfully complete this program and receive your university qualification without having to travel or fill out laborious paperwork"

This **Postgraduate Certificate in Assisted Development of Software Applications using 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 diploma 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 Assisted Development of Software Applications using Artificial Intelligence**

Official Nº of Hours: **150 h.**


tech technological university

Awards the following

DIPLOMA

to

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

For having passed and accredited the following program

POSTGRADUATE CERTIFICATE

in

Assisted Development of Software Applications using 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

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 EDUCATION will make the necessary arrangements to obtain it, at an additional cost.

tech technological university

Postgraduate Certificate

Assisted Development of Software Applications using Artificial Intelligence

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

Postgraduate Certificate

Assisted Development of Software Applications using Artificial Intelligence

tech technological university