

# Postgraduate Diploma Multiplatform Application Development using Artificial Intelligence





## Postgraduate Diploma Multiplatform Application Development using Artificial Intelligence

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

Website: [www.techtute.com/us/information-technology/postgraduate-diploma/postgraduate-diploma-multiplatform-application-development-artificial-intelligence](http://www.techtute.com/us/information-technology/postgraduate-diploma/postgraduate-diploma-multiplatform-application-development-artificial-intelligence)

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Certificate

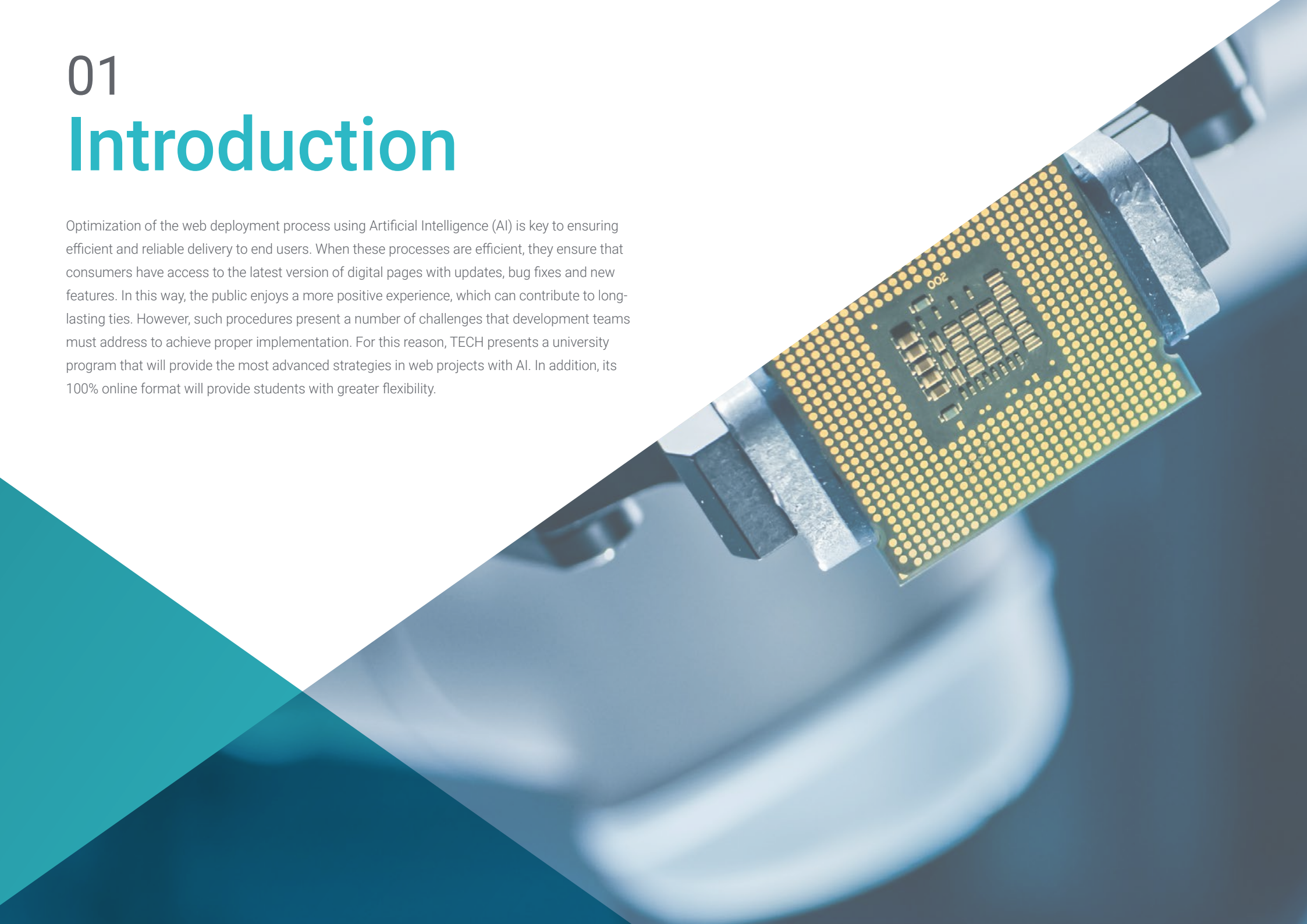
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# 01

# Introduction

Optimization of the web deployment process using Artificial Intelligence (AI) is key to ensuring efficient and reliable delivery to end users. When these processes are efficient, they ensure that consumers have access to the latest version of digital pages with updates, bug fixes and new features. In this way, the public enjoys a more positive experience, which can contribute to long-lasting ties. However, such procedures present a number of challenges that development teams must address to achieve proper implementation. For this reason, TECH presents a university program that will provide the most advanced strategies in web projects with AI. In addition, its 100% online format will provide students with greater flexibility.



“

*Address the development in the best digital university in the world according to Forbes”*

Improving productivity in *software* development with Machine Learning has a significant impact on the quality of IT projects. For example, its systems allow applications to improve over time and adapt to user needs. As a result, professionals implement development processes that are both more efficient and cost-effective. In this way, companies gain competitive advantages by being able to adapt quickly to changing market needs and deliver goods or services immediately. This allows them to differentiate themselves from their competitors, while launching innovative products to capture the public's attention.

In order to optimize these procedures through AI, TECH is launching an exclusive program aimed at IT professionals. The curriculum will focus on the integration of Machine Learning in database management, allowing students to search for potential bugs in software and create unit tests. The syllabus will also delve into how students can optimize deployment processes on web pages. Furthermore, the teaching materials will delve into the many benefits of cloud computing, including greater scalability of resources in a flexible manner. The program is designed to provide knowledge for 450 hours of study, and all theoretical and practical knowledge is presented through high-quality multimedia content, master classes, lectures, and video techniques that allow for the exchange of learning.

This program is taught in online format and uses the *Relearning* methodology based on the reiteration of fundamental concepts throughout the syllabus to facilitate the integration of knowledge in a natural and progressive way. In addition, the professional will be able to access the materials and tools at any time and from anywhere. In this way, they will be able to combine their professional tasks and their personal lives with a first class program and updating.

This **Postgraduate Diploma in Multiplatform Application Development 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 it is conceived scientific and practical information on those 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 implement effective strategies with which you will optimize the deployment of your websites and respond with immediacy to market demands"*

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*Do you want to specialize in Firebase Configuration? Achieve your goals with this innovative program in just 6 months"*

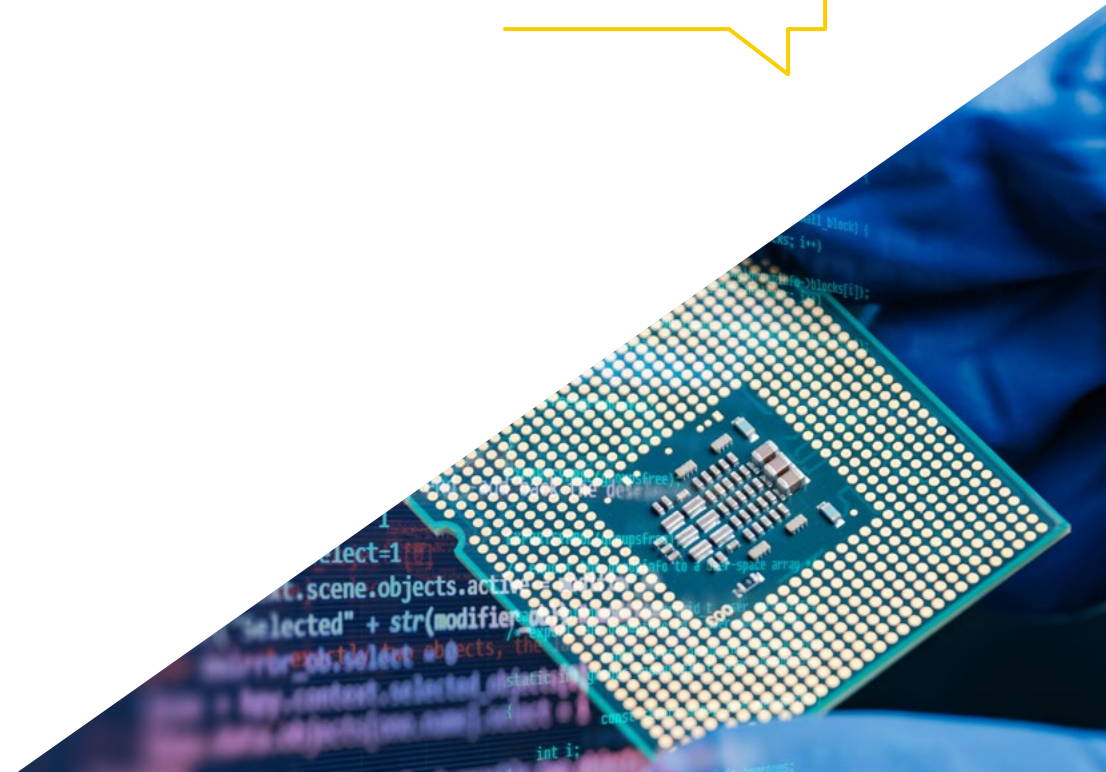
The program's teaching staff includes professionals from the sector who contribute their work experience to this program, as well as renowned specialists from leading societies and prestigious universities.

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.

*You will delve into machine translation between different programming languages, creating applications that work on a variety of platforms.*

*The Relearning system applied by TECH in its programs reduces the long hours of study so frequent in other teaching methods.*



# 02 Objectives

This Postgraduate Diploma will enable graduates to master the configuration of optimized development environments. In addition, computer scientists will apply concrete techniques using ChatGTP for the automatic identification and correction of possible code improvements. It should be noted that students will acquire comprehensive skills aimed at the implementation of web projects, from Frontend design to Backend optimization. In addition, programmers will create interactive screens, icons and other graphic resources to improve the user experience in mobile applications.





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*You will master the main Artificial Intelligence tools to improve productivity in software development”*



## General Objectives

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- ♦ 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 bug detection 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



*With the most highly valued study methods in online teaching, this program will allow you to make unstoppable progress in your professional growth”*





## Specific Objectives

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### Module 1. Improving Software Development Productivity with Artificial Intelligence

- ♦ 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

### Module 2. Web Projects with Artificial Intelligence

- ♦ Develop comprehensive skills for the implementation of web projects, from *frontend* design to *backend* optimization, with the inclusion of AI elements
- ♦ Optimize the process of deploying websites, incorporating techniques and tools to improve speed and efficiency
- ♦ Integrate AI into cloud computing, enabling students to create highly scalable and efficient web projects
- ♦ Acquire the ability to identify specific problems and opportunities in web projects where AI can be effectively applied, such as in text processing, personalization, content recommendation, etc
- ♦ Encourage students to keep abreast of the latest trends and advances in AI for its proper application in web projects

### Module 3. Mobile Applications with Artificial Intelligence

- ♦ Apply advanced concepts of *clean architecture*, *datasources* and *repositories* to ensure a robust and modular structure in AI-enabled mobile applications
- ♦ Develop skills to design interactive screens, icons and graphical resources using AI to enhance the user experience in mobile applications
- ♦ Delve into mobile app framework configuration and employ *GitHub Copilot* to streamline the development process
- ♦ Optimize mobile applications with AI for efficient performance, taking into account resource management and data usage
- ♦ Perform quality testing of AI mobile applications, enabling students to identify problems and debug bugs

# 03

# Course Management

This Postgraduate Diploma in Multiplatform Application Development using Artificial Intelligence has been developed by a first class teaching team. These professionals have an extensive professional background, being part of internationally recognized IT companies. In addition to staying at the technological forefront, these specialists have a broad perspective towards the future needs of the sector and expose them in a didactic way. In this way, computer scientists will learn from the best in the industry, with the guarantee of having the most up-to-date knowledge.



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*Learn with the best! The diversity of talents and knowledge of the faculty will create a dynamic learning environment”*

## Management



### Dr. Peralta Martín-Palomino, Arturo

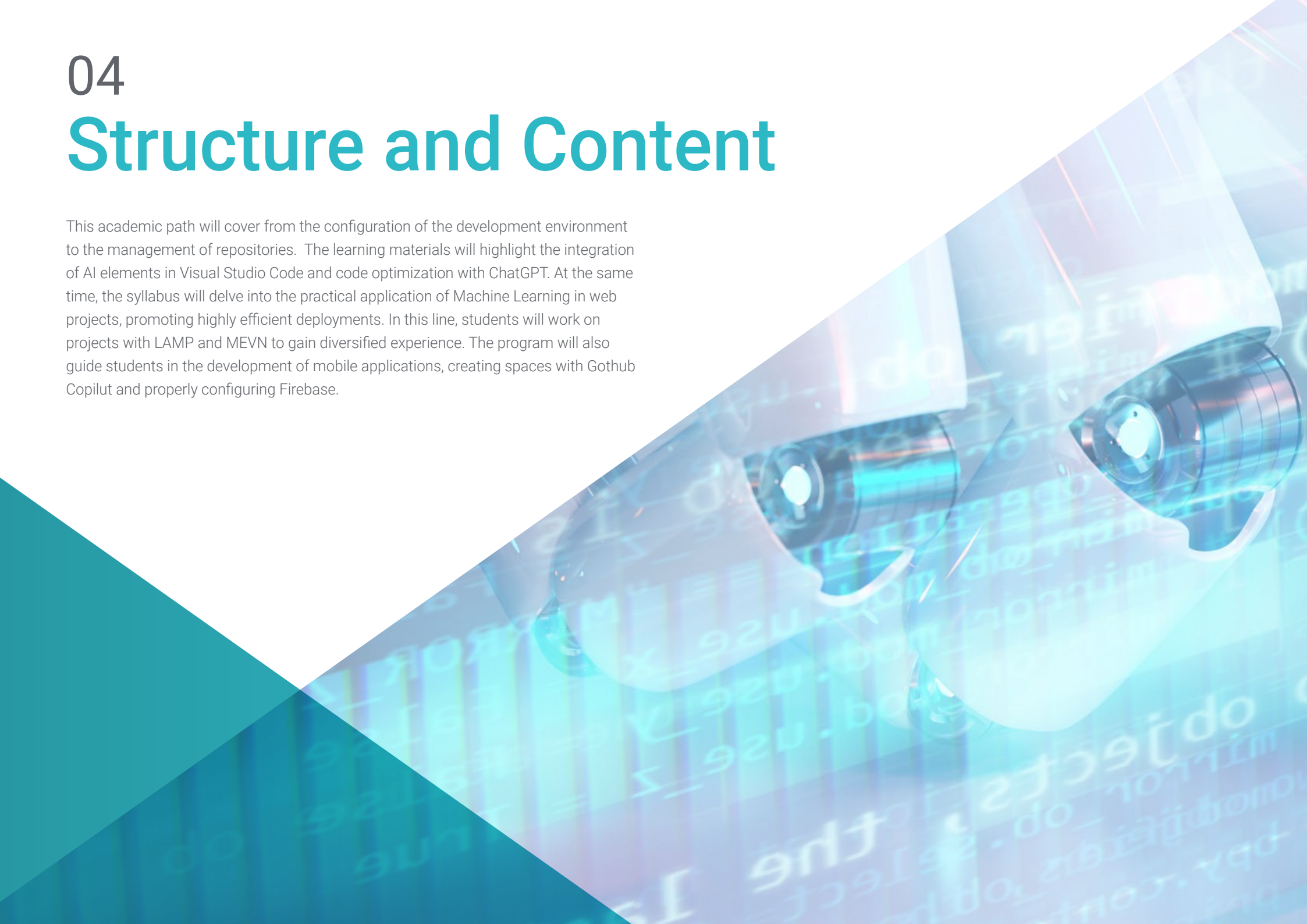
- ♦ CEO and CTO at Prometheus Global Solutions
- ♦ CTO at Korporate Technologies
- ♦ CTO at AI Shepherds GmbH
- ♦ Consultant and Strategic Business Advisor at Alliance Medical
- ♦ Director of Design and Development at DocPath
- ♦ Ph.D. in Psychology from the University of Castilla - La Mancha
- ♦ Ph.D. in Economics, Business and Finance from the Camilo José Cela University
- ♦ Ph.D. in Psychology from University of Castilla – La Mancha
- ♦ Master 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



# 04

## Structure and Content

This academic path will cover from the configuration of the development environment to the management of repositories. The learning materials will highlight the integration of AI elements in Visual Studio Code and code optimization with ChatGPT. At the same time, the syllabus will delve into the practical application of Machine Learning in web projects, promoting highly efficient deployments. In this line, students will work on projects with LAMP and MEVN to gain diversified experience. The program will also guide students in the development of mobile applications, creating spaces with Github Copilot and properly configuring Firebase.







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*You will optimize codes using ChatGPT  
and generate automatic documentations  
for easy understanding”*

### Module 1. Improving Software Development Productivity with Artificial Intelligence

- 1.1. Prepare a Suitable Development Environment
- 1.2. Essential AI Extensions for Visual Studio Code
- 1.3. No-code Design of User Interfaces with AI Elements
- 1.4. Code Optimization using ChatGPT
- 1.5. Repository Management with AI
- 1.6. Integration of AI in Database Management
- 1.7. Fault Finding and Creation of Unit Tests with AI
- 1.8. Pair Programming with GitHub Copilot
- 1.9. Automatic Translation between Programming Languages
- 1.10. Recommended AI Tools to Improve Productivity

### Module 2. Web Projects with Artificial Intelligence

- 2.1. Preparation of the Working Environment for Web Development with AI
- 2.2. Workspace Creation for AI Projects
- 2.3. Design Patterns in AI Products
- 2.4. Frontend Development with AI
- 2.5. Database Creation
- 2.6. Back-End Development with AI
- 2.7. Optimizing Your Web Deployment Process
- 2.8. AI in Cloud Computing
- 2.9. Creating an AI-enabled Project for LAMP Environments
- 2.10. Creating an AI-enabled Project for MEVN Environments



## Module 3. Mobile Applications with Artificial Intelligence

- 3.1. Preparation of Working Environment for Mobile Development with AI
  - 3.1.1. Configuration of Mobile Development Environments for Projects with Artificial Intelligence
  - 3.1.2. Selection and Preparation of Specific Tools for Mobile Application Development with AI
  - 3.1.3. Integration of AI Libraries and Frameworks in Mobile Development Environments
  - 3.1.4. Configuration of Emulators and Real Devices for Testing Mobile Applications with AI Components
- 3.2. Creating a Workspace with GitHub Copilot
  - 3.2.1. Integration of GitHub Copilot in Mobile Development Environments
  - 3.2.2. Effective Use of GitHub Copilot for Code Generation in AI Projects
  - 3.2.3. Strategies for Developer Collaboration when using GitHub Copilot in the Workspace
  - 3.2.4. Best Practices and Limitations in the Use of GitHub Copilot in Mobile Application Development with AI
- 3.3. Firebase Configuration
  - 3.3.1. Initial Configuration of a Firebase Project for Mobile Development
  - 3.3.2. Firebase Integration in Mobile Applications with Artificial Intelligence Functionalities
  - 3.3.3. Use of Firebase Services as a Database, Authentication and Notifications in AI Projects
  - 3.3.4. Strategies for Real-Time Data and Event Management in Firebase-enabled Mobile Applications
- 3.4. Concepts of Clean Architecture, DataSources, Repositories
  - 3.4.1. Fundamental Principles of Clean Architecture in Mobile Development with AI
  - 3.4.2. Implementation of DataSources and Repositories Layers in Clean Architectures
  - 3.4.3. Design and Structuring of Components in Mobile Projects with a Focus on Clean Architecture
  - 3.4.4. Benefits and Challenges of Implementing Clean Architecture in Mobile Applications with AI
- 3.5. Authentication Screen Creation
  - 3.5.1. Design and Development of User Interfaces for Authentication Screens in Mobile Applications with AI
  - 3.5.2. Integration of Authentication Services with Firebase in the Login Screen
  - 3.5.3. Use of Security and Data Protection Techniques in the Authentication Screen
  - 3.5.4. Personalization and Customization of the User Experience on the Authentication Screen
- 3.6. Dashboard and Navigation Creation
  - 3.6.1. Dashboard Design and Development with Artificial Intelligence Elements
  - 3.6.2. Implementation of Efficient Navigation Systems in Mobile Applications with AI
  - 3.6.3. Integration of AI Functionalities in the Dashboard to Improve User Experience
- 3.7. Creation of Listing Screen
  - 3.7.1. Development of User Interfaces for AI-enabled Mobile Application Listing Displays
  - 3.7.2. Integration of Recommendation and Filtering Algorithms in the Listing Screen
  - 3.7.3. Use of Design Patterns for Effective Data Presentation in the Listing Screen
  - 3.7.4. Strategies for Efficient Real-Time Data Loading in the Listing Screen
- 3.8. Creating Detail Screen
  - 3.8.1. Design and Development of Detailed User Interfaces for the Presentation of Specific Information
  - 3.8.2. Integration of AI Functionalities to Enrich the Detail Screen
  - 3.8.3. Implementation of Interactions and Animations in the Detail Screen
  - 3.8.4. Strategies for Performance Optimization in Loading and Detail Display in AI-enabled Mobile Applications
- 3.9. Creating Settings Screen
  - 3.9.1. Development of User Interfaces for Configuration and Settings in AI-enabled Mobile Applications
  - 3.9.2. Integration of Custom Settings Related to AI Components
  - 3.9.3. Implementing Customization Options and Preferences in the Configuration Screen
  - 3.9.4. Strategies for Usability and Clarity in the Presentation of Options in the Settings Screen
- 3.10. Creating Icons, Splash and Graphic Resources for Your App with AI
  - 3.10.1. Designing and Creating Attractive Icons to Represent Your AI Mobile Application
  - 3.10.2. Developing Splash Screens with Impressive Visual Elements
  - 3.10.3. Selection and Adaptation of Graphic Resources to Enhance the Aesthetics of the Mobile Application
  - 3.10.4. Strategies for Consistency and Visual Branding in AI Application Graphics Elements

# 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

This Postgraduate Diploma in Multiplatform Application Development using Artificial Intelligence guarantees, in addition to the most rigorous and up-to-date education, access to a Postgraduate Diploma issued by TECH Technological University.





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

This **Postgraduate Diploma in Multiplatform Application Development using Artificial Intelligence** contains the most complete and up-to-date educational program on the market.

After the student has passed the assessments, they will receive their corresponding **Postgraduate Diploma** issued by **TECH Technological University** via tracked delivery\*.

The diploma issued by **TECH Technological University** will reflect the qualification obtained in the Postgraduate Diploma, and meets the requirements commonly demanded by labor exchanges, competitive examinations, and professional career evaluation committees.

Title: **Postgraduate Diploma in Multiplatform Application Development using Artificial Intelligence**

Official N° of hours: **450 h.**



\*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.



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# Postgraduate Diploma

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