

# Postgraduate Certificate

## Web Application Development with Artificial Intelligence



## Postgraduate Certificate Web Application Development with Artificial Intelligence

- » Modality: Online
- » Duration: 6 weeks
- » Certificate: TECH Technological University
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtute.com/us/artificial-intelligence/postgraduate-certificate/definition-artificial-intelligence-software-architectures](http://www.techtute.com/us/artificial-intelligence/postgraduate-certificate/definition-artificial-intelligence-software-architectures)

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# 01

# Introduction

Artificial Intelligence (AI) in cloud computing provides a wide range of applications, ranging from data analysis to process automation or cyber security. In this way, organizations take advantage of the power of Machine Learning without the need to invest in expensive infrastructure or specialized resources. In addition, services in virtual spaces allow the implementation of chatbots that can interact with users in a natural way and provide solid answers to consumers' frequently asked questions. Aware of their advantages, organizations are constantly looking to incorporate IT specialists in this area. For this reason, TECH has launched a 100% online university program that will perfect these web projects with Artificial Intelligence.





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*TECH creates a flexible and 100% online university program to meet the real needs of professionals”.*

Optimizing the deployment process on websites is a key procedure for computer scientists, as it saves time and resources. Experts can therefore devote more time to innovation or the development of new functionalities. In this sense, these procedures make it easier for professionals to respond with immediacy to users' needs and to problems that arise to improve the competitiveness of the site. In addition, with Artificial Intelligence, online portals are updated more frequently and with fewer interruptions. As a result, end consumers experience a more reliable service. This significantly improves customer satisfaction and brand loyalty.

Faced with this situation, TECH implements an advanced program that will offer keys to optimize web projects through Intelligent Computing. During 6 weeks of intensive updating, students will delve into the preparation of the work environment for web development with Artificial Intelligence. Likewise, the syllabus will delve into Frontend and Backend procedures, which will nurture the IT procedures. In addition, the syllabus will analyze the creation of databases for the graduates to host large volumes of information.

Thanks to the fact that this Postgraduate Certificate is developed through an 100% online methodology, professionals will have the possibility of expanding their learning without having to adhere to uncomfortable pre-established study schedules. Also, this university program is designed and taught by reference specialists in Web Application Development with Artificial Intelligence, who have extensive experience in the IT industry. Therefore, all the knowledge provided to students will have a complete applicability in daily computing practice. Students will be highly qualified to successfully face the challenges they will face during their web software projects, which will allow them to stand out in a digital sector that is evolving by leaps and bounds.

This **Postgraduate Certificate in Web Application Development with Artificial Intelligence** contains the most complete and updated educational program on the market. Its most notable features are:

- ♦ 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 optimize the process of website deployments and ensure that updates are deployed efficiently to users."*

“

*Do you want to specialize in the creation of Workspaces more suitable for the creation of projects? Achieve it in 180 hours with this revolutionary specialization”.*

*You will delve into the design patterns in products with Artificial Intelligence to provide the most innovative proposals.*

*Relearning will allow you to learn with less effort and more performance, getting more involved in your professional specialization.*

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

Thanks to this university program, graduates will acquire comprehensive skills for the implementation of web projects. In this way, they will successfully address Frontend design and Backend optimization with the inclusion of Artificial Intelligence elements. In tune with this, students will optimize the deployment processes of websites, implementing tools aimed at improving their efficiency. On the other hand, students will integrate Machine Learning to cloud computing. This will allow IT professionals to design highly scalable web projects.





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*You will have real case studies that will enhance your skills in database creation.”*



## 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



*You will access a Virtual Library packed with multimedia resources that will strengthen your knowledge in a dynamic way. And it will be available 24 hours a day!"*







## Specific Objectives

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- ♦ 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.



# 03

# Course Management

TECH is firmly committed to the quality of the programs it offers. For this reason, the institution carries out a selection process for all teachers. For this purpose, factors such as their knowledge and professional background have been taken into account. In this sense, the years of experience of these professionals make them authoritative voices for the design and delivery of this specialization. Likewise, these experts have mastered the most modern technological tools of Machine Learning. Therefore, they will guide students through their learning and help them acquire skills that will raise their professional horizons.



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*An exhaustive update on Web Application Development with Artificial Intelligence through a program designed by real specialists”.*

## Management



### Dr. Peralta Martín-Palomino, Arturo

- CEO and CTO at Prometheus 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 focus on the practical application of Machine Learning in web projects. For this purpose, the syllabus will cover from environment preparation to efficient deployment. Along the same lines, the syllabus will include advanced procedures such as Frontend and Backend, highlighting the optimization of the deployment process. In turn, the didactic materials will provide students with the keys to integrate Artificial Intelligence in cloud computing. The university program will also enable experts to work on projects with LAMP and MEVN environments, therefore gaining diversified experience.



“

*You will optimize the deployment of your websites by implementing the most effective techniques to improve their speed and efficiency.”*



## Module 1. Website Projects with AI

- 1.1. Working Environment Preparation for Web Development with AI
  - 1.1.1. Configuration of Web Development Environments for Projects with Artificial Intelligence
  - 1.1.2. Selection and Preparation of Essential Tools for Web Development with AI
  - 1.1.3. Integration of Specific Libraries and Frameworks for Web Projects with Artificial Intelligence
  - 1.1.4. Implementation of Best Practices in the Configuration of Collaborative Development Environments
- 1.2. Workspace Creation for AI Projects with GitHub Copilot
  - 1.2.1. Effective Design and Organization of Workspaces for Web Projects with Artificial Intelligence Components
  - 1.2.2. Use of Project Management and Version Control Tools in the Workspace
  - 1.2.3. Strategies for Efficient Collaboration and Communication in the Development Team
  - 1.2.4. Adaptation of the Workspace to the Specific Needs of AI Web Projects
- 1.3. Design Patterns in Github Copilot Products
  - 1.3.1. Identification and Application of Common Design Patterns in User Interfaces with Artificial Intelligence Elements
  - 1.3.2. Development of Specific Patterns to Improve the User Experience in AI Web Projects
  - 1.3.3. Integration of Design Patterns in the Overall Architecture of Web Projects with Artificial Intelligence
  - 1.3.4. Evaluation and Selection of Appropriate Design Patterns According to the Project's Context
- 1.4. Frontend Development with GitHub Copilot
  - 1.4.1. Integration of AI Models in the Presentation Layer of Web Projects
  - 1.4.2. Development of Adaptive User Interfaces with Artificial Intelligence Elements
  - 1.4.3. Implementation of Natural Language Processing (NLP) Functionalities in Frontend Development
  - 1.4.4. Strategies for Performance Optimization in Frontend Development with AI



- 1.5. Database Creation using GitHub Copilot
  - 1.5.1. Selection of Database Technologies for Web Projects with Artificial Intelligence
  - 1.5.2. Design of Database Schemas for Storing and Managing AI-Related Data
  - 1.5.3. Implementation of Efficient Storage Systems for Large Volumes of Data Generated by AI Models
  - 1.5.4. Strategies for Security and Protection of Sensitive Data in AI Web Project Databases
- 1.6. Back-End Development with GitHub Copilot
  - 1.6.1. Integration of AI Services and Models in the Back-End Business Logic
  - 1.6.2. Development of Specific APIs and Endpoints for Communication between Front-End and AI Components
  - 1.6.3. Implementation of Data Processing and Decision-Making Logic in the Backend with Artificial Intelligence
  - 1.6.4. Strategies for Scalability and Performance in Back-End Development of Web Projects with AI
- 1.7. Automation of Web Project Build and Deployment Processes with ChatGPT
  - 1.7.1. Automation of Web Project Build and Deployment Processes with AI
  - 1.7.2. Implementing CI/CD Pipelines Tailored to Web Applications with Github Copilot
  - 1.7.3. Strategies for Efficient Release and Upgrade Management in Continuous Deployments
  - 1.7.4. Post-Deployment Monitoring and Analysis for Continuous Process Improvement
- 1.8. AI in Cloud Computing
  - 1.8.1. Integration of Artificial Intelligence Services in Cloud Computing Platforms
  - 1.8.2. Development of Scalable and Distributed Solutions using Cloud Services with AI Capabilities
  - 1.8.3. Strategies for Efficient Resource and Cost Management in Cloud Environments with AI-enabled Web Applications
  - 1.8.4. Evaluation and Comparison of Cloud Service Providers for AI-enabled Web Projects
- 1.9. Creating an AI Project for LAMP Environments with the Help of ChatGPT
  - 1.9.1. Adaptation of Web Projects Based on the LAMP Stack to Include Artificial Intelligence Components
  - 1.9.2. Integration of AI-specific Libraries and Frameworks in LAMP Environments
  - 1.9.3. Development of AI Functionalities that Complement the Traditional LAMP Architecture
  - 1.9.4. Strategies for Optimization and Maintenance in Web Projects with AI in LAMP Environments
- 1.10. Creating an AI Project for MEVN Environments Using ChatGPT
  - 1.10.1. Integration of MEVN Stack Technologies and Tools with Artificial Intelligence Components
  - 1.10.2. Development of Modern and Scalable Web Applications in MEVN Environments with AI Capabilities
  - 1.10.3. Implementation of Data Processing and Machine Learning functionalities in MEVN Projects
  - 1.10.4. Strategies for Performance and Security Enhancement of AI-enabled Web Applications in MEVN Environments

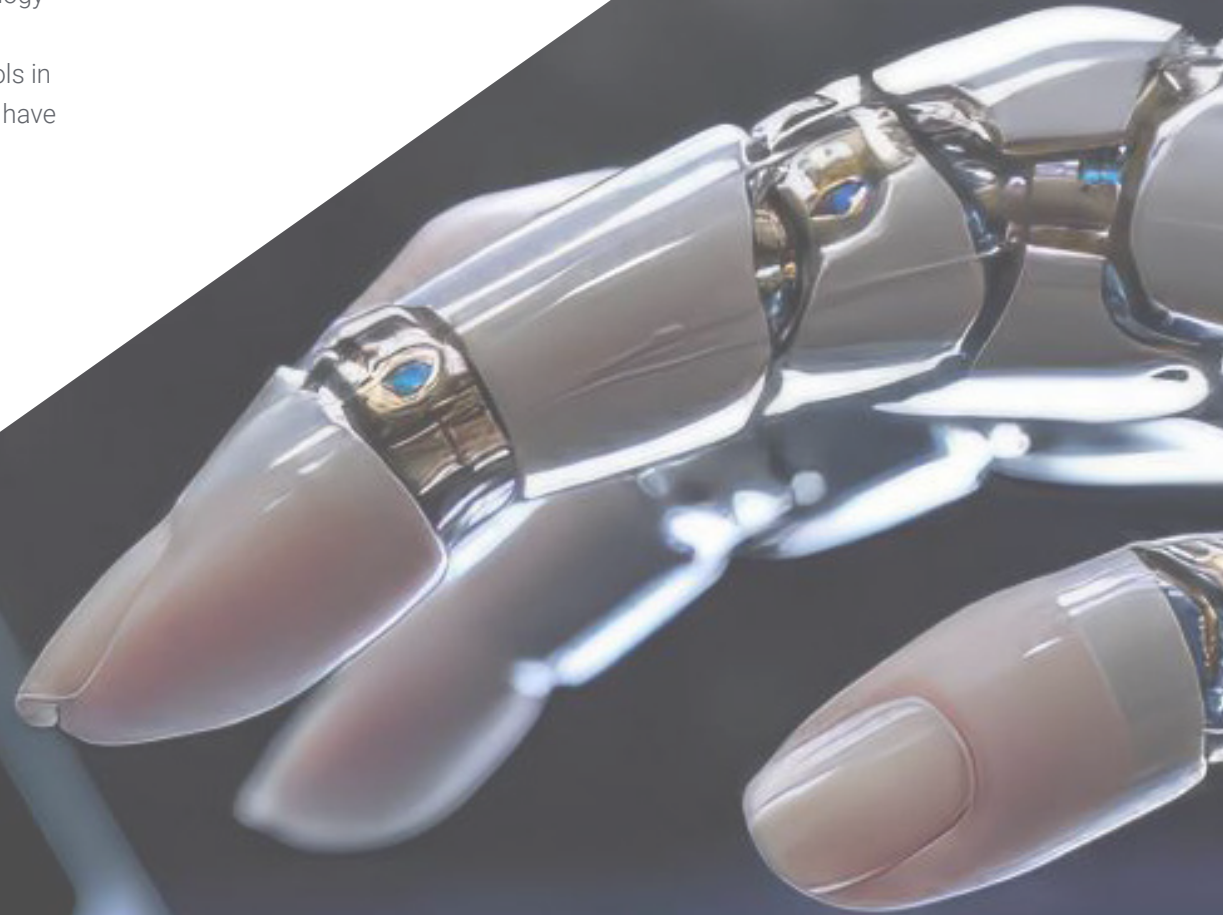


*You will have a 100% online program that offers an immersive and solid educational experience. Do not miss the opportunity and enroll now”.*

# 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.







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*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.

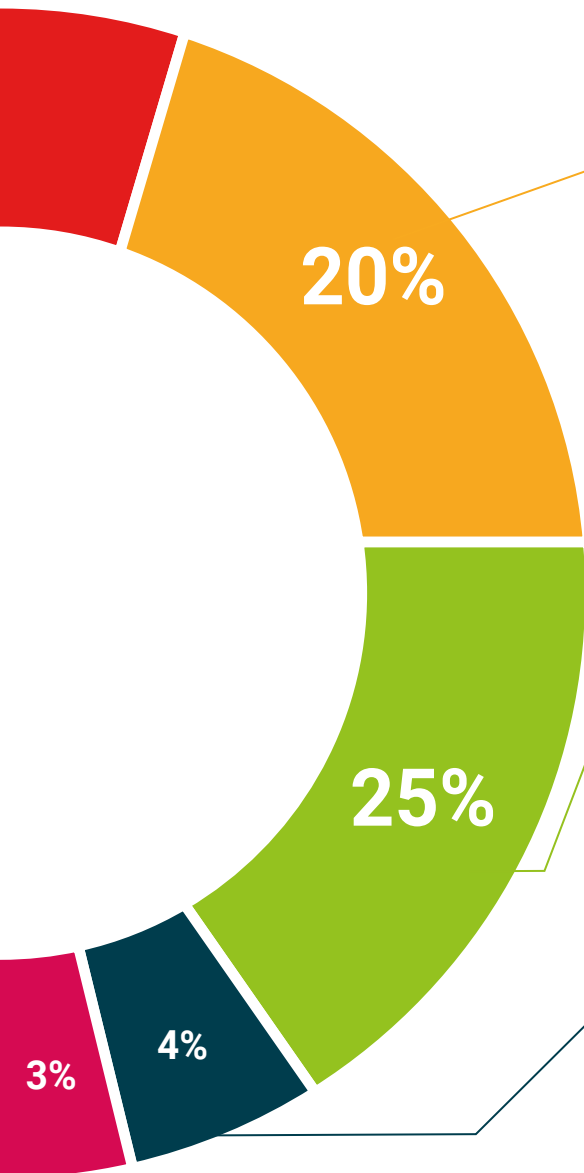


#### Additional Reading

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 Certificate in Web Application Development with 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.



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



This **Postgraduate Certificate in Web Application Development with 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 Professional Master's Degree, and meets the requirements commonly demanded by labor exchanges, competitive examinations, and professional career evaluation committees.

Title: **Postgraduate Certificate in Web Application Development with Artificial Intelligence**

Course Modality: **Online**

Duration: **6 weeks**



\*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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