Postgraduate Certificate
Artificial Intelligence and IoT Applications in Telemedicine

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Postgraduate Certificate
Artificial Intelligence and IoT Applications in Telemedicine

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

Website: **www.techtitute.com/in/medicine/postgraduate-certificate/artificial-intelligence-iot-applications-telemedicine**

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01
Introduction

Artificial Intelligence has managed to be positioned as a very popular tool for the majority of knowledge science and medicine is not the exception to this situation. Its integration with IoT has allowed the implementation of technological elements to generate effective virtual medical consultation spaces without needing a physical encounter between the professional and the patient. For this reason, there are more and more updates in this area and with this program the student will get to know them all, since its academic itinerary is focused on giving the student a very complete update on the novelties of this field. This, based on a 100% methodology that will allow you to have more control over your time.

You will find the best contents on Artificial Intelligence and IoT Applications to Telemedicine in this incredible Postgraduate Certificate"

The integration of technological elements within Telemedicine has become a widely used exercise in recent years. This thanks to the evolution of systems and the increase in the amount of information handled in the medical field, making the implementation of these tools increasingly necessary. For this reason, it is essential to have healthcare professionals who are specialized in this knowledge and who are fully trained to apply the latest A.I. and IoT techniques in their daily practice.

For this reason, it is offered to professionals who want to make a deep update of their knowledge this Postgraduate Certificate in Applications of Artificial Intelligence and IoT to Telemedicine, which aims to give students a complete learning about the latest techniques and tools that provide these instruments to the medical field.

During the academic program, topics such as the E-Health platform, AI algorithms for image processing, natural language processing in Telemedicine, the Internet of Things as a functional tool for the development of consultations or treatments and the application of types of nano-robots focused on this sector will be addressed.

And all this, by means of the innovative Relearning methodology, which allows the student to learn from the comfort of their home and at the time of their choice, since they will have full access 24 hours a day to the multimedia resources that they will find in the virtual campus. In addition, you will be taught by an excellent teaching staff, which is made up of the best professionals in A.I. and IoT and who will convey the real picture of this field.

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

- The development of case studies presented by experts in Artificial Intelligence and IoT Applications in Telemedicine
- The graphic, schematic, and practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional practice
- Practical exercises where self-assessment can be used to improve learning
- Its special emphasis on innovative methodologies
- Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- The availability of access to content from any fixed or portable device with an Internet connection

You have the ambition to be the best and TECH has the tools to achieve it. Enroll now"

What are you waiting for to advance in your career? Take this degree and explore a vast sea of Telemedicine knowledge"

Get updated on the latest technologies that allow remote monitoring of vital signs, better known as weareble.

From anywhere and at anytime of the day you want, you will get an extensive update on the latest developments in this field.

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

Its multimedia content, developed with the latest educational technology, will provide the professional with situated and contextual learning, i.e., a simulated environment that will provide an immersive education programmed to learn in real situations.

The design of this program focuses on Problem-Based Learning, by means of which the professional must try to solve the different professional practice situations that are presented throughout the academic course. For this purpose, the student will be assisted by an innovative interactive video system created by renowned experts.

02
Objectives

The main objective of this Postgraduate Certificate is to provide the student with the most relevant advanced tools to carry out the application of A.I. and IoT in areas directly related to Telemedicine. In this way, students will have the opportunity to update their knowledge in this field and perfect their skills to face the challenges that currently exist in this area. To achieve this, TECH has prepared a wide range of multimedia teaching resources developed specifically for this degree program.
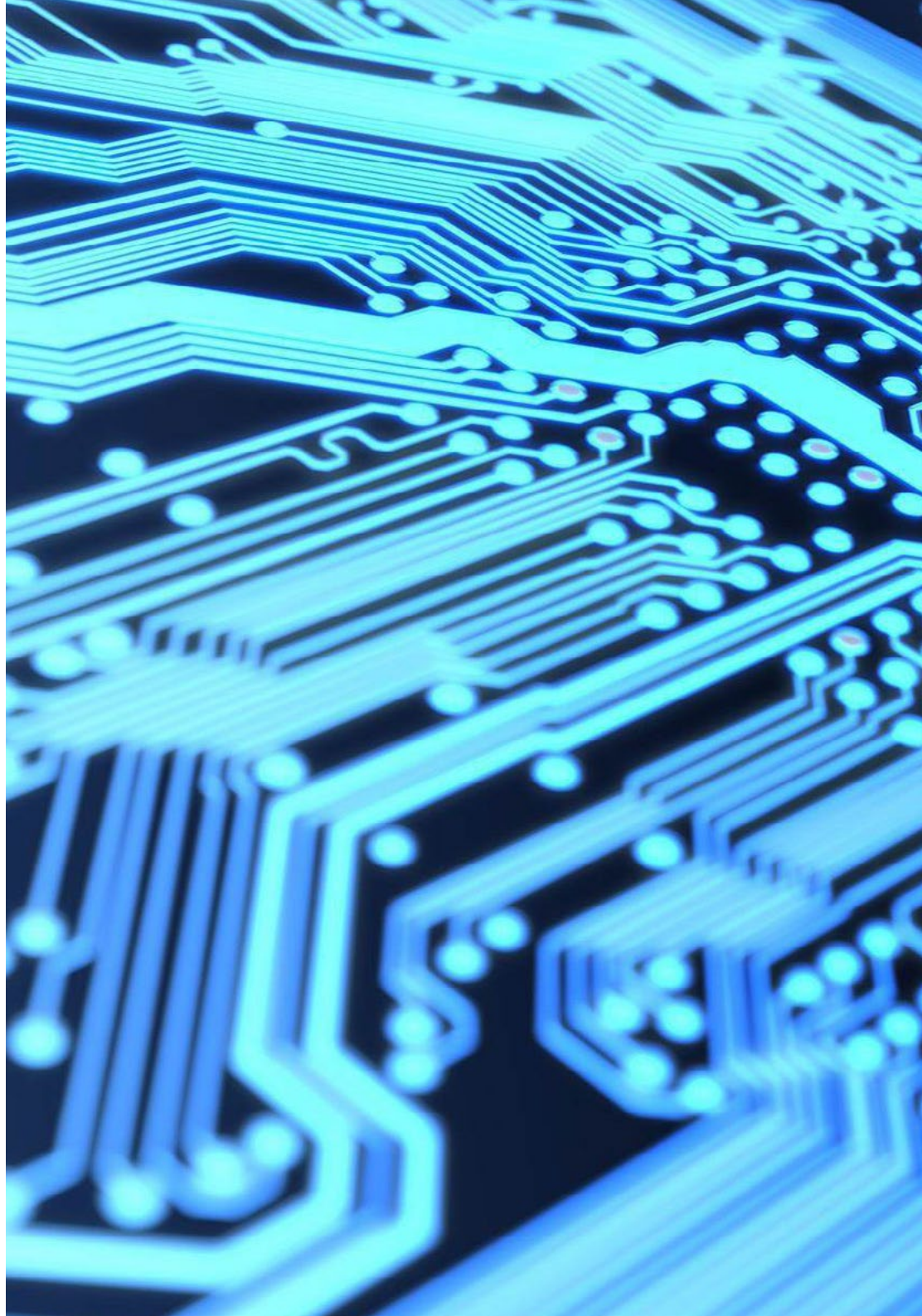
" *Master the main Artificial Intelligence models and apply them as needed in an advanced way, thanks to this program"*

General Objectives

- Identify the opportunities offered by the IoT in the field of e-Health

- Provide specialized knowledge of the technologies and methodologies used in the design, development and assessment of telemedicine systems

- Establish the different types and applications of telemedicine

- Delve into the most common ethical aspects and regulatory frameworks of telemedicine

- Analyze the use of medical devices

- Develop key concepts of medicine that serve as a vehicle to understand clinical medicine

- Determine the major diseases affecting the human body classified by apparatus or systems, structuring each module into a clear outline of pathophysiology, diagnosis, and treatment

Specific objectives

- Propose communication protocols in different scenarios in the healthcare field
- Analyze IoT communication, as well as its application areas in e-Health
- Substantiate the complexity of artificial intelligence models in its use in healthcare
- Identify the optimization brought by parallelization in GPU-accelerated applications and its use in healthcare
- Present all the Cloud technologies available to develop E-Health and IoT products, both computing and communication

Who said that medicine and informatics cannot be compatible? Start this program and find out why this question is so unrealistic"

03
Course Management

TECH has chosen the Professors of this program carefully to ensure educational excellence and to offer a complete training that will ensure students a great advantage in the job market. In this way, the best prepared professionals in this area will share with the students the most relevant aspects that include the implementation of Artificial Intelligence and IoT, as IT tools applicable to Telemedicine. In addition, students will improve their job skills by learning from working experts about the current demands of this industry.
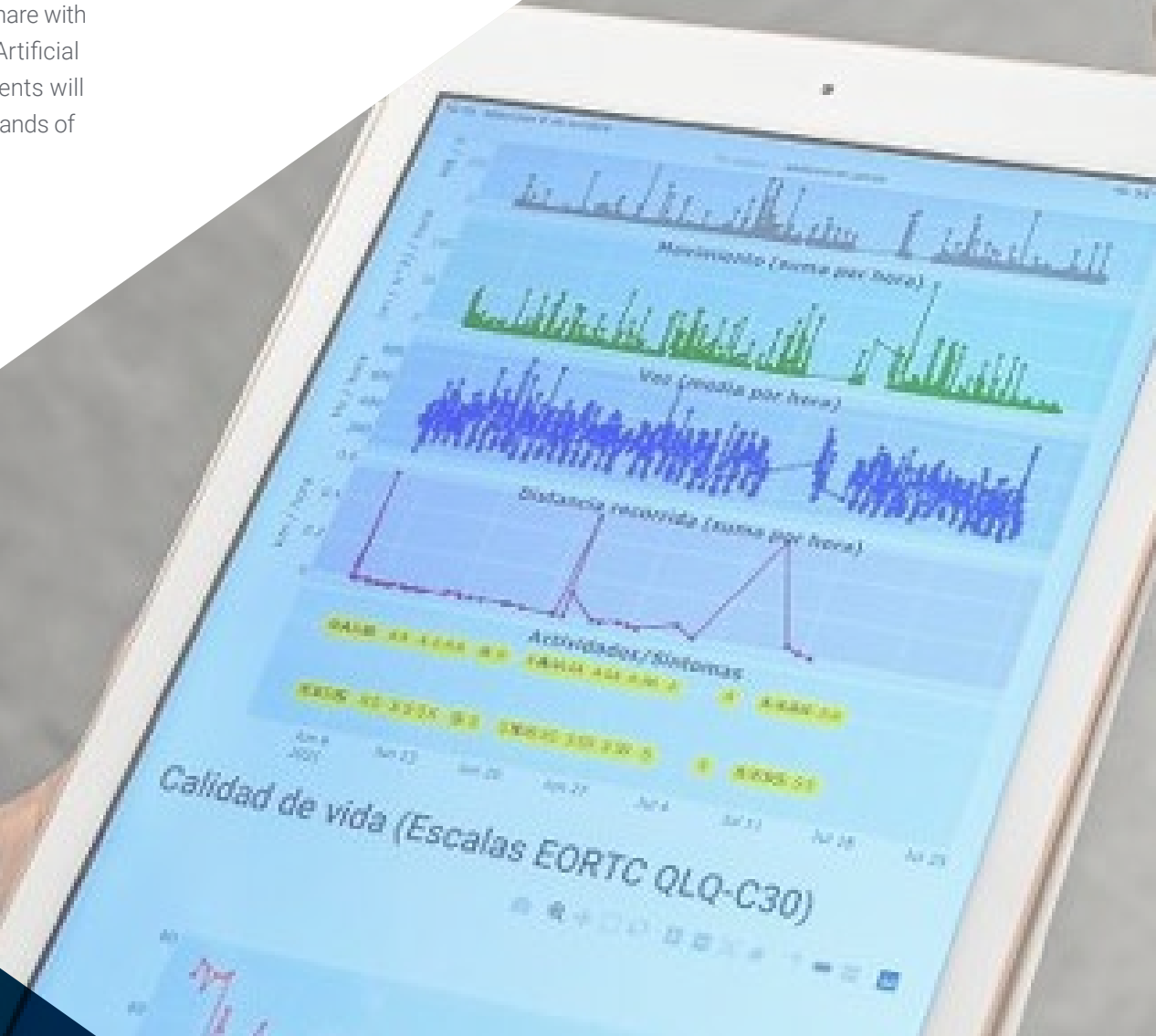
The best A.I. and IoT specialists are ready to share all their knowledge with you. Don't hesitate any longer and give the most important boost to your career"

Management

Ms. Sirera Pérez, Ángela

- Biomedical Engineer expert in Nuclear Medicine and exoskeleton design
- Designer of specific parts for 3D printing at Technadi
- Technician of the Nuclear Medicine area of the Navarra University Clinic
- Degree in Biomedical Engineering from the University of Navarra
- MBA and Leadership in Healthcare and Medical Technology Companies

Professors

Ms. Muñoz Gutiérrez, Rebeca

- Data Scientist at INDITEX
- Firmware Engineer for Clue Technologies
- Graduate in Health Engineering, specializing in Biomedical Engineering, University of Malaga and University of Seville
- Master's Degree in Intelligent Avionics, Clue Technologies, in collaboration with the University of Málaga
- NVIDIA: Fundamentals of Accelerated Computing with CUDA C/C++
- NVIDIA: Accelerating CUDA C++ Applications with Multiple GPUs

04

Structure and Content

Leading experts in this area have created the contents included in the syllabus of this Postgraduate Certificate. In this way, students will gain a specialized understanding of the implementation of the tools offered by artificial intelligence for medicine and the transformation that the Internet of Things is bringing to this field. All this, based on multimedia resources and the analysis of practical cases that will facilitate knowledge assimilation.

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"A Postgraduate Certificate that will provide you with advanced knowledge about nano-robots and their integration in medicine"

Module 1. Applications of Artificial Intelligence and the Internet of Things (IoT) in Telemedicine

1.1.   E-Health Platforms. Personalizing Healthcare Services
    1.1.1.   E-Health Platform
    1.1.2.   Resources for E-Health Platforms
    1.1.3.   Digital Europe Program. Digital Europe-4-Health and Horizon Europe

1.2.   Artificial Intelligence in Healthcare I: New Solutions in Computer Applications
    1.2.1.   Remote Analysis of Results
    1.2.2.   Chatbox
    1.2.3.   Prevention and Real-Time Monitoring
    1.2.4.   Preventive and Personalized Medicine in Oncology

1.3.   Artificial Intelligence in Healthcare II:
    1.3.1.   Monitoring Patients with Reduced Mobility
    1.3.2.   Cardiac Monitoring, Diabetes, Asthma
    1.3.3.   Health and Wellness Apps
        1.3.3.1. Heart Rate Monitors
        1.3.3.2. Blood Pressure Bracelets
    1.3.4.   Ethical Use of AI in the Medical Field. Data Protection

1.4.   Artificial Intelligence Algorithms for Image Processing
    1.4.1.   Artificial Intelligence Algorithms for Image Handling
    1.4.2.   Image Diagnosis and Monitoring in Telemedicine
        1.4.2.1. Melanoma Diagnosis
    1.4.3.   Limitations and Challenges in Image Processing in Telemedicine

1.5.   Application Acceleration using Graphics Processing Units (GPU) in Medicine
    1.5.1.   Program Parallelization
    1.5.2.   GPU Operations
    1.5.3.   Application Acceleration using GPU in Medicine

1.6.   Natural Language Processing (NLP) in Telemedicine
    1.6.1.   Text Processing in the Medical Field. Methodology
    1.6.2.   Natural Language Processing in Therapy and Medical Records
    1.6.3.   Limitations and Challenges of Natural Language Processing in Telemedicine

Update your knowledge in IoT and Artificial Intelligence with the goal of applying these concepts within the field of Telemedicine"

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"*

At TECH we use the Case Method

What should a professional do in a given situation? Throughout the program, students will face multiple simulated clinical cases, based on real patients, in which they will have to do research, establish hypotheses, and ultimately resolve the situation. There is an abundance of scientific evidence on the effectiveness of the method. Specialists learn better, faster, and more sustainably over time.

With TECH you will experience a way of learning that is shaking the foundations of traditional universities around the world.

According to Dr. Gérvas, the clinical case is the annotated presentation of a patient, or group of patients, which becomes a "case", an example or model that illustrates some peculiar clinical component, either because of its teaching power or because of its uniqueness or rarity. It is essential that the case is based on current professional life, trying to recreate the real conditions in the physician's professional practice.

"Did you know that this method was developed in 1912, at Harvard, for law students? The case method consisted of presenting students with real-life, complex situations for them to make decisions and justify their decisions on how to solve them. In 1924, Harvard adopted it as a standard teaching method"

The effectiveness of the method is justified by four fundamental achievements:

1. Students who follow this method not only achieve the assimilation of concepts, but also a development of their mental capacity, through exercises that evaluate real situations and the application of knowledge.

2. Learning is solidly translated into practical skills that allow the student to better integrate into the real world.

3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life.

4. Students like to feel that the effort they put into their studies is worthwhile. This then translates into a greater interest in learning and more time dedicated to working on the course.

Relearning Methodology

At TECH we enhance the case method with the best 100% online teaching methodology available: Relearning.

This university is the first in the world to combine the study of clinical cases with a 100% online learning system based on repetition, combining a minimum of 8 different elements in each lesson, a real revolution with respect to the mere study and analysis of cases.

Professionals will learn through real cases and by resolving complex situations in simulated learning environments. These simulations are developed using state-of-the-art software to facilitate immersive learning.

01 learning from evidence

02 relearning from evidence

03 testing

04 learning from an expert

05 neurocognitive context dependent learning

06 Von-Restorff effect

07 case based learning through storytelling

08 competencies testing (retesting)

At the forefront of world teaching, the Relearning method has managed to improve the overall satisfaction levels of professionals who complete their studies, with respect to the quality indicators of the best online university (Columbia University).

With this methodology, more than 250,000 physicians have been trained with unprecedented success in all clinical specialties regardless of surgical load. Our pedagogical methodology is developed in a highly competitive environment, with a university student body with a strong socioeconomic profile and an average age of 43.5 years old.

Relearning will allow you to learn with less effort and better performance, involving you more in your specialization, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation to success.

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.

The overall score obtained by TECH's learning system is 8.01, according to the highest international standards.

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.

Surgical Techniques and Procedures on Video

TECH introduces students to the latest techniques, the latest educational advances and to the forefront of current medical techniques. All of this in direct contact with students and explained in detail so as to aid their assimilation and understanding. And best of all, you can watch the videos as many times as you like.

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".

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.

20%

15%

15%

3%

20%

17%

7%

3%

Expert-Led Case Studies and Case Analysis

Effective learning ought to be contextual. Therefore, TECH presents real cases in which the expert will guide students, focusing on and solving the different situations: a clear and direct way to achieve the highest degree of understanding.

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.

Classes

There is scientific evidence on the usefulness of learning by observing experts. The system known as Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

Quick Action Guides

TECH offers the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical, and effective way to help students progress in their learning.

06

Certificate

The Postgraduate Certificate in Artificial Intelligence and IoT Applications in Telemedicine 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"
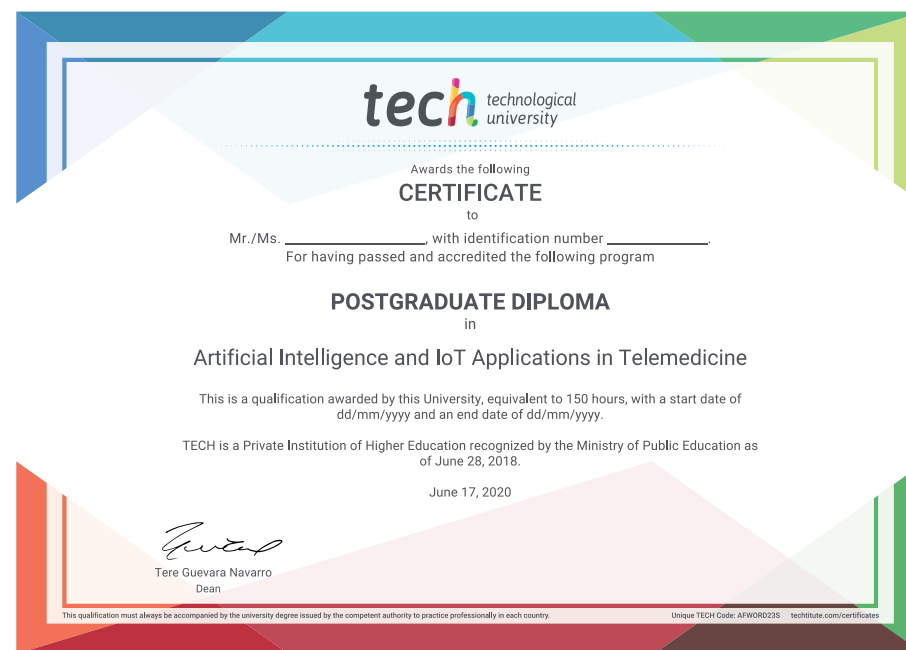
This **Postgraduate Certificate in Artificial Intelligence and IoT Applications in Telemedicine** contains the most complete and up-to-date scientific program on the market.

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

The certificate 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.

Program: **Postgraduate Certificate in Artificial Intelligence and IoT Applications in Telemedicine**

Official Nº of Hours: **150 h.**

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Awards the following
CERTIFICATE
to
Mr./Ms. _____, with identification number _____.
For having passed and accredited the following program

POSTGRADUATE DIPLOMA
in
Artificial Intelligence and IoT Applications in Telemedicine

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

This qualification must always be accompanied by the university degree issued by the competent authority to practice professionally in each country.   Unique TECH Code: AFWORD23S   techtitute.com/certificates

*Apostille Convention. In the event that the student wishes to have their paper certificate issued with an apostille, TECH EDUCATION will make the necessary arrangements to obtain it, at an additional cost.

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