PostgraduateCertificate

Artificial Intelligence and IoT Applications in Telemedicine
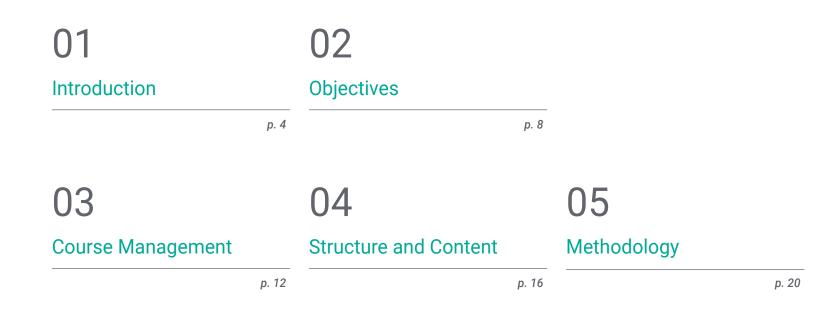
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Postgraduate Certificate
Artificial Intelligence and IoT Applications in Telemedicine

» Modality: **online**
» Duration: **6 weeks**
» Certificate: **TECH Global University**
» Credits: **6 ECTS**
» Schedule: **at your own pace**
» Exams: **online**

Website: **www.techtitute.com/us/nursing/postgraduate-certificate/artificial-intelligence-lo-applications-telemedicine**

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01
Introduction

Artificial Intelligence has proven to be the future of medical processes. COVID has provided an opportunity for the application of telemedicine technologies. As a result, health care has been digitized and even hospital rooms have been set up for patients with contagious diseases. These advances have undoubtedly fostered much more personalized, faster and safer health care. Therefore, professionals who are working in the current clinical area or those who wish to integrate into this field of work, must be fully aware of the latest scientific evidence on AI. For this reason, TECH has designed a complete and rigorous program, which delves into E-health, IoT and Cloud technology, among many other issues. It is a 100% online academic experience, which will facilitate the study of the enrolled specialists and allow their qualification wherever they are.

A program with which you will apply, in only 6 weeks, AI to the clinical setting thanks to the simulation of real cases"

Technology has not only enabled advances in diagnosis and streamlined clinical recording, but also makes it possible to remotely follow patients with serious epidemiological conditions. In its struggle to offer a much more personalized and individualized service, the health care labor market is calling for experts in ICTs, IoT and new technologies. Having this skill will be essential not only for the specialists of tomorrow, but also for those who are already in the profession and have to adapt to its constant changes.

The benefit of being able to forecast a disease before it spreads has a direct impact on the wellbeing of patients. For this reason, it is essential that health professionals are prepared to deal with specific cases, applying specific treatments in each of them and with technological tools that speed up rehabilitation. All this in order to promote the efficacy of pharmacological treatments and predict the behavior of diseases.

To address this professional demand, TECH offers this Postgraduate Certificate in Artificial Intelligence and IoT Applications in Telemedicine. Graduates in Nursing and other scientific branches who receive the teaching, will specialize in the application of technologies in medicine, its algorithms and its newest tools. Additionally, they will have the support of teachers who have worked in the clinical sector for years and audiovisual materials, which will be shared through different formats and that will make the program a much more dynamic and enriching process.

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:

- Development of practical cases presented by experts in Artificial Intelligence and IoT
- The graphic, schematic, and practical contents with which they are created, provide 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

Be part of the development of computer applications in the field of oncology to determine tumor cases with similar characteristics in a multitude of patients"

" *Have you not yet mastered AI applied to your professional field? Don't get left behind and specialize with a 100% online education that adapts to your needs"*

Thanks to TECH, you will learn more about the role of IoT in emergency detection and victim recognition.

Learn about the advantages of AI in patient monitoring with blood pressure cuffs.

The program's teaching staff includes professionals from the 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 allow the professional a situated and contextual learning, that is, a simulated environment that will provide an immersive training programmed to train in real situations.

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

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Objectives

This university program aims to expand and update the health care knowledge of those specialists who wish to focus on AI in telemedicine. The main objective is to project the career of the professionals enrolled towards changes in E-health and its tools in the clinical setting. Thanks to its 100% online mode, the course is flexible and adaptable to the personal and professional needs of the specialists. In this way, it will be the student who decides the pace of study, while acquiring all the necessary knowledge to develop E-health and IoT products, both computing and communication.

Fulfill your goal, get involved in AI algorithms projects for image processing and be able to diagnose patients with melanoma quickly and safely"

General Objectives

- Develop key concepts of medicine that will serve as a vehicle for the understanding of 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

- Determine how to obtain metrics and tools for health care management

- Understand the basics of basic and translational scientific methodology

- Examine the ethical and best practice principles governing the different types of research in health sciences

- Identify and generate the means of funding, assessing and disseminating scientific research

- Identify the real clinical applications of the various techniques

- Develop the key concepts of computational science and theory

- Determine the applications of computer science and its implication in bioinformatics

- Provide the necessary resources to practically apply all the concepts in the modules

- Develop the fundamental concepts of databases

- Determine the importance of medical databases

- Delve into the most important techniques in research

- 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

- Determine the different types and applications of telemedicine

- Study the most common ethical aspects and regulatory frameworks of telemedicine

- Analyze the use of medical devices

- Develop the key concepts of entrepreneurship and innovation in E-Health

- Determine what a business model is and the types that exist

- Collect E-Health success stories and mistakes to avoid

- Apply the knowledge acquired to an original business idea

Specific Objectives

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

Enroll now in this Postgraduate Certificate, so that you can intervene as a multidisciplinary professional in the management of health crisis due to epidemiological diseases"
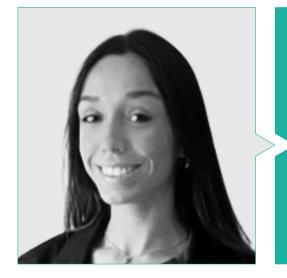
03
Course Management

TECH has been equipped with the theoretical and practical knowledge of its teachers to provide, together with them, a complete and rigorous program on telemedicine. The professional team has years of experience in the field of clinical artificial intelligence, so they will share with students their practices in the real scenario of action. All this, to instruct the specialists enrolled in the program in nanotechnology, health and wellness apps and clinical digitization programs, among many other concepts. This makes the Postgraduate Certificate a fast and effective opportunity to acquire all the knowledge in AI and IoT, being supported by a team with which the students can contact through a direct communication.

Get into the possibilities offered by telemedicine with an expert team in the area that will guide you to act under the ethics in the real clinical scenario"

Management

Ms. Sirera Pérez, Ángela

- Biomedical Engineer Expert in Nuclear Medicine and Exoskeleton Design
- Designer of specific parts for 3D printing at Technadi
- Technician in the Nuclear Medicine area of the University Clinic of Navarra
- Degree in Biomedical Engineering from the University of Navarra
- MBA and Leadership in Health care and Medical Technology Companies

Professors

Ms. Muñoz Gutiérrez, Rebeca

- Data Scientist at INDITEX
- Firmware Engineer for Clue Technologies
- Graduate in Health Engineering with Mention in Biomedical Engineering from the University of Malaga and the University of Seville
- Master's Degree in Intelligent Avionics from 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 GPU

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Structure and Content

The syllabus of this Postgraduate Certificate in Artificial Intelligence and IoT Applications in Telemedicine has been developed by professionals with several years of experience in the sector. They are experienced professionals in radiology, telemedicine and E-health. Thanks to their long experience, students will not only enjoy theoretical knowledge of AI, but will also learn how to apply it in the health care field, thanks to the practical guidelines provided by the teachers. Additionally, TECH applies the *Relearning* methodology, to exempt students from long hours of memorization that usually occur in other orthodox programs. In contrast, this will enable students to assimilate the contents in a constant and gradual manner.

Don't wait any longer, sign up now to learn about the advantages of nano-robots in the recovery of cancer cells and their rehabilitative role in oncological diseases"

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

1.1. E-Health Platform. 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 the Health care Field 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. Graphics Processing Unit (GPU) Acceleration Applications 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 in Natural Language Processing in Telemedicine

A program designed for professionals like you, who want to increase their skills with a digital academic update focused on new technologies applied in the health care field"

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 Nursing School we use the Case Methodology

In a given situation, what should a professional do? 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. Nurses learn better, faster, and more sustainably over time.

With TECH, nurses can experience a learning methodology 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, in an attempt to recreate the real conditions in professional nursing 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. Nurses who follow this method not only grasp concepts, but also develop their mental capacity, by evaluating real situations and applying their knowledge.

2. The learning process has a clear focus on practical skills that allow the nursing professional to better integrate knowledge acquisition into the hospital setting or primary care.

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 case studies with a 100% online learning system based on repetition combining a minimum of 8 different elements in each lesson, which is a real revolution compared to the simple study and analysis of cases.

The nurse will learn through real cases and by solving 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

08 competencies testing (retesting)

03 testing

07 case based learning through storytelling

04 learning from an expert

06 Von-Restorff effect

05 neurocognitive context dependent learning

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 we have trained more than 175,000 nurses with unprecedented success in all specialities regardless of practical workload. 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 really 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.

Nursing Techniques and Procedures on Video

We introduce you to the latest techniques, to the latest educational advances, 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 them as many times as you want.

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%

3%

7%

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 suggesting that observing third-party experts can be useful.

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.

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 Global University.

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

This program will allow you to obtain your **Postgraduate Certificate in Artificial Intelligence and IoT Applications in Telemedicine** endorsed by **TECH Global University**, the world's largest online university.

TECH Global University is an official European University publicly recognized by the Government of Andorra (*official bulletin*). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

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

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**

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Mr./Ms. _____, with identification document _____ has successfully passed and obtained the title of:

Postgraduate Certificate in Artificial Intelligence and IoT Applications in Telemedicine

This is a program of 180 hours of duration equivalent to 6 ECTS, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH Global University is a university officially recognized by the Government of Andorra on the 31st of January of 2024, which belongs to the European Higher Education Area (EHEA).

In Andorra la Vella, on the 28th of February of 2024

Dr. Pedro Navarro Illana
Rector

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 diploma issued with an apostille, TECH Global University will make the necessary arrangements to obtain it, at an additional cost.

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