Postgraduate Certificate

Computational Design and Artificial Intelligence

tech global university

Postgraduate Certificate
Computational Design and Artificial Intelligence

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

Website: **www.techtitute.com/us/artificial-intelligence/postgraduate-certificate/computational-design-artificial-intelligence**

Index

01
Introduction

Computational Design and Artificial Intelligence (AI) offer a combination that has revolutionized the way solutions are conceived, developed and optimized. Computational Design harnesses the power of algorithms and digital tools to model, simulate and analyze complex systems, accelerating the design process and reducing costs. Artificial Intelligence enhances this approach by offering machine learning, optimization and data-driven decision making capabilities. Together, both disciplines enable the creation of more efficient, adaptive and customized solutions, such as building architecture, radically transforming the way contemporary challenges are addressed. That is why TECH has devised this innovative program, based on the pioneering *Relearning* methodology.

Take advantage of the benefits of the combination of Computational Design and Artificial Intelligence, improving your efficiency and accuracy in Design processes. Enroll now!"

Computational Design and Artificial Intelligence (AI) facilitate the design process by automating complex tasks, optimizing processes and generating efficient solutions. In the field of architectural design, for example, the use of Computational Design algorithms allows exploring a wide range of possibilities, in terms of shapes and structures, optimizing performance and energy efficiency. On the other hand, Artificial Intelligence applied to the design of products or user interfaces allows to personalize experiences and anticipate user needs, improving usability and satisfaction.

In this context, TECH has developed this Postgraduate Certificate in Computational Design and Artificial Intelligence, which will offer designers a comprehensive understanding of how Artificial Intelligence can revolutionize and enhance the creative process in Graphic Design. From automation in the generation of visual content, to the ability to foresee trends and AI-enhanced collaboration, professionals will explore an ever-evolving field.

Graduates will also acquire practical skills through the use of tools and techniques that harness the power of Artificial Intelligence to create visually stunning and functionally effective designs. In addition, they will delve into case studies and real-world examples that illustrate how Artificial Intelligence is already transforming the Graphic Design industry, from personalizing experiences to optimizing workflows. Likewise, experimentation and the development of projects that creatively integrate artificial intelligence into the design process will be encouraged.

TECH has designed a solid academic program based on the innovative *Relearning* methodology. This educational method focuses on reiterating key concepts to ensure a complete understanding of the content. Similarly, accessibility is a priority, as students will only require an electronic device connected to the Internet to access the material, freeing them from the obligation of classroom attendance or complying with specific schedules.

The **Postgraduate Certificate in Computational Design and Artificial Intelligence** contains the most complete and up-to-date program on the market. The most important features include:

- Development of practical cases presented by experts in Computational Design and Artificial Intelligence
- The graphic, schematic and practical contents of the book provide technical 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

This 100% online Postgraduate Certificate will provide you with powerful tools to achieve more advanced Design solutions adapted to the current demands"

"Get ready to face the challenges and opportunities of a constantly changing and evolving market, all through an extensive library of the most innovative multimedia resources"

Bet on TECH! This revolutionary program will address Generative Design, thanks to a software program powered by Artificial Intelligence.

You will delve into Machine Learning, a discipline of Artificial Intelligence that you will be able to use to recognize patterns in logos through algorithms.
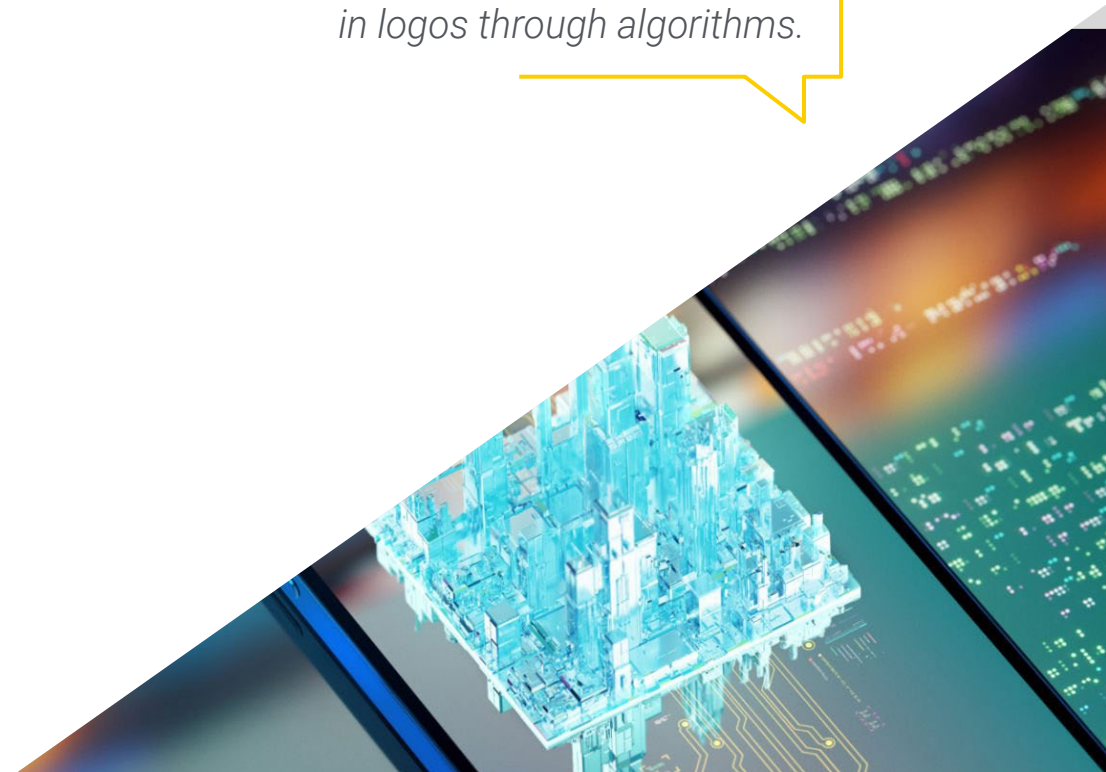
The program's teaching staff includes professionals from the sector who contribute their work experience to this training program, as well as renowned specialists from leading societies and prestigious universities.

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

This program is designed around Problem-Based Learning, whereby the professional must try to solve the different professional practice situations that arise during the academic year For this purpose, the students will be assisted by an innovative interactive video system created by renowned and experienced experts.

02
Objectives

The program's main objective is to equip professionals with the skills and knowledge necessary to become innovative leaders in the field of Design. Through a rigorous and practical approach, graduates will use Artificial Intelligence tools and the latest technologies in Computational Design, allowing them to not only understand, but also take full advantage of the transformative potential of Artificial Intelligence in the creative process. Upon completion of the program, designers will be able to create innovative solutions, which uniquely merge technology and creativity to respond to the demands of today's marketplace.

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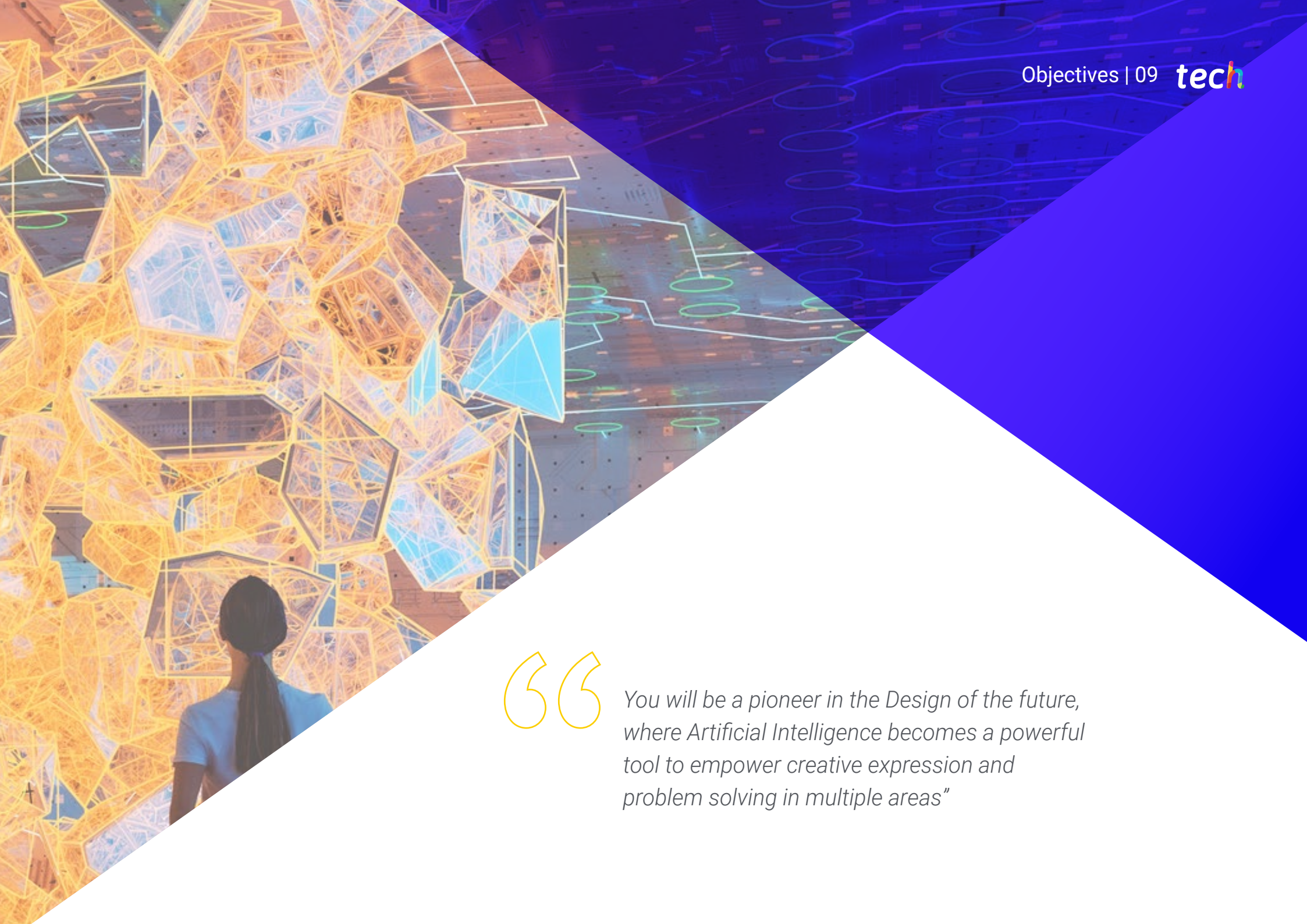
"You will be a pioneer in the Design of the future, where Artificial Intelligence becomes a powerful tool to empower creative expression and problem solving in multiple areas"

General Objectives

- Develop skills to implement artificial intelligence tools in design projects, including automatic content generation, design optimization and pattern recognition
- Apply collaborative tools, taking advantage of Artificial Intelligence to improve communication and efficiency in design teams

" *You'll effectively integrate AI into your creative processes, from automatic content generation to enhanced collaboration and trend anticipation"*

Specific Objectives

- Apply collaborative tools, taking advantage of Artificial Intelligence to improve communication and efficiency in design teams

- Incorporate emotional aspects into designs through techniques that effectively connect with the audience, exploring how Artificial Intelligence can influence the emotional perception of Design

- Master tools and frameworks specific to the application of Artificial Intelligence in Design, such as GANs (Generative Adversarial Networks) and other relevant libraries

- Employ Artificial Intelligence to automatically generate images, illustrations and other visuals

- Implementing Artificial Intelligence techniques to analyze design-related data, such as navigation behavior and user feedback

03

Course Management

The faculty behind this Postgraduate Certificate is composed of highly qualified professionals who are passionate about the convergence between Design and Artificial Intelligence, offering a unique and updated perspective on how technology is transforming the world of Design. With a solid background in the practical application of Artificial Intelligence in various fields of Graphic Design, the teachers will not only stay in theory, but will also share their experience in implementing these tools in real projects.

"

Learn from the best and become an expert in Artificial Intelligence Driven Design! The faculty will guide you towards a complete mastery of the skills needed to be an innovative leader"

International Guest Director

Flaviane Peccin is a leading data scientist with more than a decade of international experience applying predictive modeling and machine learning in various industries. Throughout her career, she has led innovative projects in the field of Artificial Intelligence, data analytics and data-driven business decision making, consolidating herself as an influential figure in the digital transformation of large corporations.

In this regard, she has held roles of great importance at Visa, as Director of Artificial Intelligence and Machine Learning, where she has been responsible for defining and executing the company's global data science strategy, with a particular focus on Machine Learning as a service. In addition, her leadership has ranged from collaboration with commercial and scientific stakeholders, to the implementation of advanced algorithms and scalable technology solutions, which have driven efficiency and accuracy in decision making. As such, her experience in integrating emerging trends in Artificial Intelligence and Gen AI has positioned her at the forefront of her field.

She has also worked as Director of Data Science in this same organization, leading a team of experts that has provided analytical consulting to clients in Latin America, developing predictive models that have optimized the cardholder lifecycle and significantly improved the management of credit and debit portfolios. Her career has also included key positions at Souza Cruz, HSBC, GVT and Telefónica, where she has contributed to the development of innovative solutions for risk management, analytical models and fraud control.

Therefore, with extensive experience in Latin American and US markets, Flaviane Peccin has been instrumental in the adaptation of products and services, using advanced statistical techniques and deep data analysis.

Ms. Peccin, Flaviane

- Director of Artificial Intelligence and Machine Learning at Visa, Miami, United States
- Director of Data Science at Visa
- Customer Analytics Manager at Visa
- Coordinator/Data Science Specialist at Souza Cruz
- Quantitative Modeling Analyst at HSBC
- Credit and Collections Analyst at GVT
- Statistical Analyst at Telefónica
- Master's Degree in Numerical Methods in Engineering from Universidade Federal do Paraná
- Bachelor's Degree in Statistics from Universidade Federal do Paraná

Thanks to TECH, you will be able to learn with the best professionals in the world"

Management

Dr. Peralta Martín-Palomino, Arturo

- CEO and CTO at Prometeus 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 University of Castilla – La Mancha
- Professional Master's Degree in Executive MBA by the Isabel I University
- Professional Master's Degree in Sales and Marketing Management, Isabel I University
- Expert Master's Degree in Big Data by Hadoop Training
- Professional Master's Degree in Advanced Information Technologies from the University of Castilla - La Mancha
- Member of: SMILE Research Group

Mr. Maldonado Pardo, Chema

- Graphic Designer at DocPath Document Solutions S.L
- Founding Partner and Head of the Design and Advertising Department at D.C.M. Difusión Integral de Ideas, C.B
- Head of the Design and Digital Printing Department at Ofipaper, La Mancha S.L
- Graphic Designer in Ático, Estudio Gráfico
- Graphic Designer and Craftsman Printer at Lozano Artes Gráficas
- Layout and Graphic Designer in Gráficas Lozano
- ETSI Telecommunications by the Polytechnic University of Madrid
- ETS Computer Systems ETSI by the University of Castilla-La Mancha

Professors

Ms. Parreño Rodríguez, Adelaida

- *Technical Developer & Energy Communities Engineer* at the University of Murcia
- *Manager in Research & Innovation in European Projects* at the University of Murcia
- *Technical Developer & Energy/Electrical Engineer & Researcher* in PHOENIX Project and FLEXUM (ONENET) Project
- Content Creator in Global UC3M Challenge
- Ginés Huertas Martínez Award (2023)
- Professional Master's Degree in Renewable Energies from the Polytechnic University of Cartagena
- Degree in Electrical Engineering (bilingual) from Carlos III University of Madrid

Structure and Content

This academic program is meticulously crafted to offer a comprehensive experience, fusing the creativity of Design with the transformative power of Artificial Intelligence. Graduates will be immersed in projects that will allow them to experiment with cutting-edge tools, develop innovative solutions and understand how Artificial Intelligence can amplify creativity in Design. In this sense, the syllabus will address the automatic generation of visual content, anticipation of trends, personalization of experiences and collaboration enhanced by Artificial Intelligence, providing a deep and practical understanding.
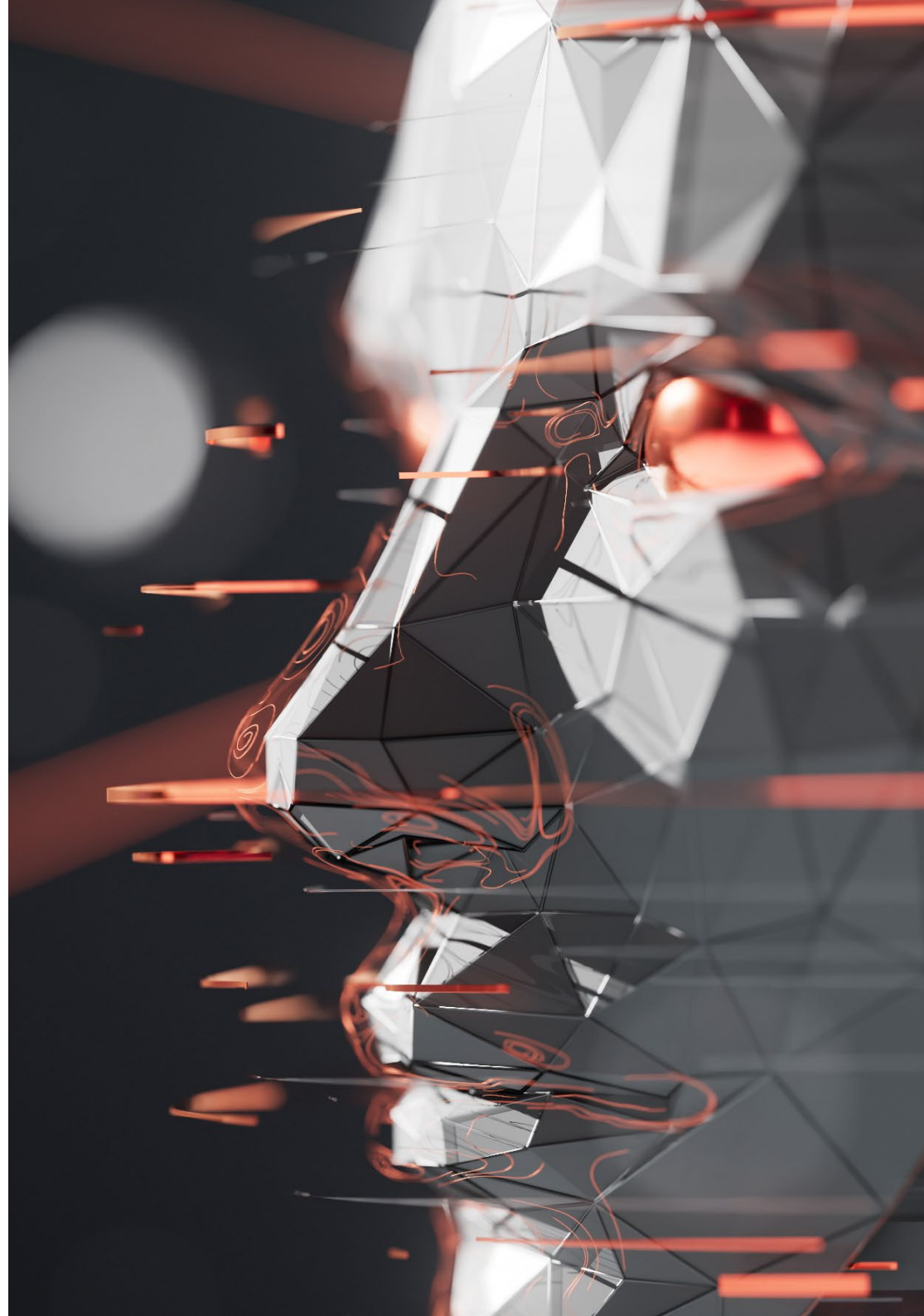
"You will cover from theoretical fundamentals to practical applications, acquiring a deep understanding of how Artificial Intelligence impacts and empowers Design"

Module 1. Practical Applications of Artificial Intelligence in Design

1.1. Automatic Image Generation in Graphic Design
    1.1.1. Fundamental Concepts of Image Generation
    1.1.2. Tools and Frameworks for Automatic Graphic Generation
    1.1.3. Social and Cultural Impact of Generative Design
    1.1.4. Current Trends in the Field and Future Developments and Applications

1.2. Dynamic Personalization of User Interfaces Using AI
    1.2.1. UI/UX Personalization Principles
    1.2.2. Recommendation Algorithms in UI Customization
    1.2.3. User Experience and Continuous Feedback
    1.2.4. Practical Implementation in Real Applications

1.3. Generative Design: Applications in Industry and Art
    1.3.1. Fundamentals of Generative Design
    1.3.2. Generative Design in Industry
    1.3.3. Generative Design in Contemporary Art
    1.3.4. Challenges and Future Advances in Generative Design

1.4. Automatic Creation of Editorial Layouts with Algorithms
    1.4.1. Principles of Automatic Editorial Layout
    1.4.2. Content Distribution Algorithms
    1.4.3. Optimization of Spaces and Proportions in Editorial Design
    1.4.4. Automation of the Revision and Adjustment Process

1.5. Procedural Generation of Content in Videogames
    1.5.1. Introduction to Procedural Generation in Videogames
    1.5.2. Algorithms for the Automatic Creation of Levels and Environments
    1.5.3. Procedural Narrative and Branching in Videogames
    1.5.4. Impact of Procedural Generation on the Player Experience

1.6. Pattern Recognition in Logos with Machine Learning
    1.6.1. Fundamentals of Pattern Recognition in Graphic Design
    1.6.2. Implementation of Machine Learning Models for Logo Identification
    1.6.3. Practical Applications in Graphic Design
    1.6.4. Legal and Ethical Considerations in Logo Recognition

Immerse yourself in a comprehensive and advanced program, unique in training highly qualified professionals in the application of Artificial Intelligence in the field of Design"

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.
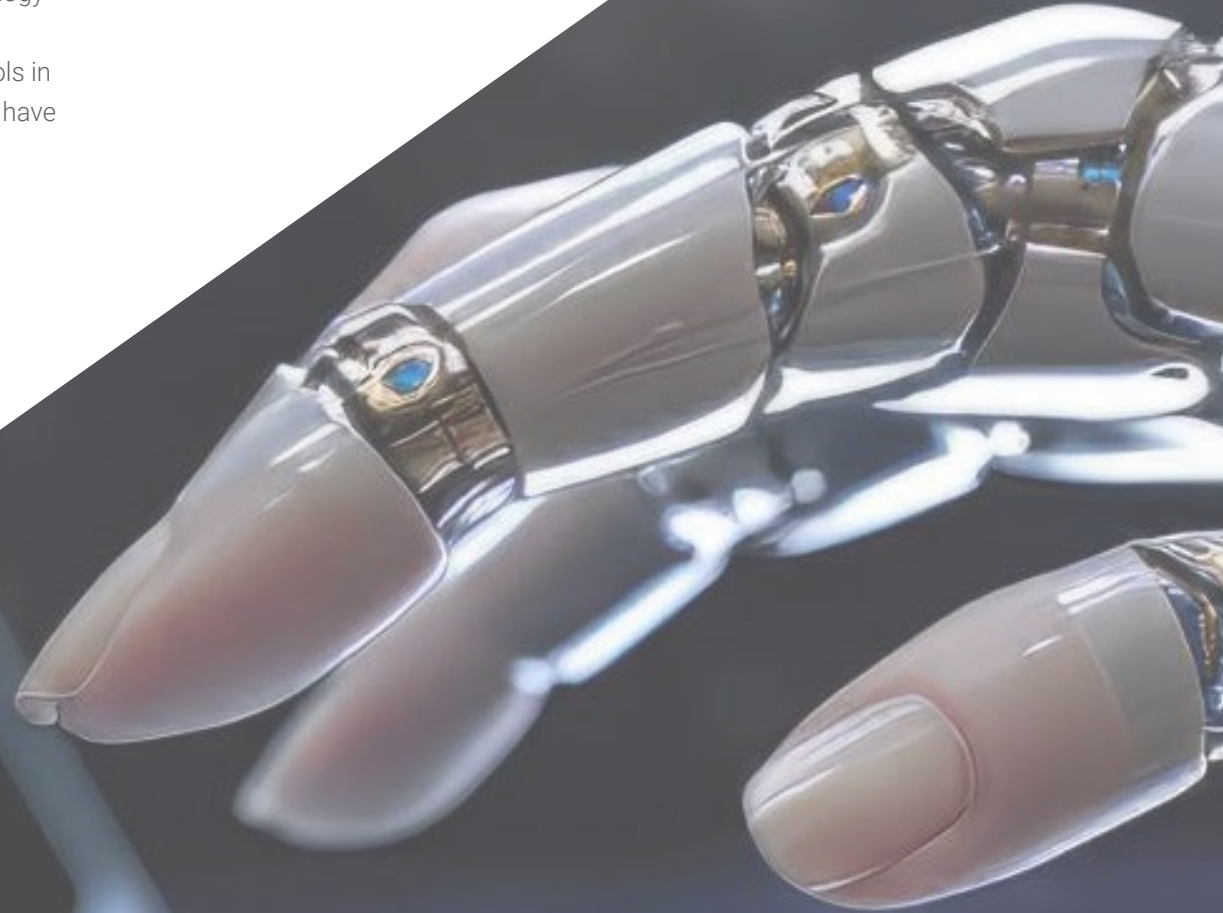
Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"

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.

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)

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.

20%

25%

4%

3%

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.

Certificate

The Postgraduate Certificate in Computational Design and Artificial Intelligence guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Global University.

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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 Computational Design and Artificial Intelligence** 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 Computational Design and Artificial Intelligence**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**

*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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tech global university

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

Postgraduate Certificate in Computational Design and Artificial Intelligen-

This is a private qualification 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
Dean

Unique TECH Code: AFWORD23S   techtitute.com/certificates

Postgraduate Certificate
Computational Design and Artificial Intelligence

» Modality: **online**
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Postgraduate Certificate
Computational Design and Artificial Intelligence

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