



Postgraduate Diploma Information Use

in Data Science

» Modality: online

» Duration: 6 months

» Certificate: TECH Technological University

» Dedication: 16h/week

» Schedule: at your own pace

» Exams: online

» Target Group: university graduates and postgraduates who have completed a degree in computer engineering

Website: www.techtitute.com/in/school-of-business/postgraduate-diploma/postgraduate-diploma-information-use-data-science

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Certificate

01 **Welcome**

Data science has become a set of techniques, technologies and tools that allow analyzing, synthesizing and extracting the hidden knowledge of a company's information. Having a professional who takes advantage of this valuable information to make transcendental decisions is an asset that brings great value to the organization. This program will develop the leadership skills of computer engineers seeking a management position in theirfield of work. This will provide the possibility of examining the tools for data management through programming languages, as well as developing the technological reference architecture for network connectivity, constituting a more friendly ecosystem with the workers of a company.









tech 08 | Why Study at TECH?

At TECH Technological University



Innovation

The university offers an online learning model that combines the latest educational technology with the most rigorous teaching methods. A unique method with the highest international recognition that will provide students with the keys to develop in a rapidly-evolving world, where innovation must be every entrepreneur's focus.

"Microsoft Europe Success Story", for integrating the innovative, interactive multi-video system.



The Highest Standards

Admissions criteria at TECH are not economic. Students don't need to make a large investment to study at this university. However, in order to obtain a qualification from TECH, the student's intelligence and ability will be tested to their limits. The institution's academic standards are exceptionally high...

95%

of TECH students successfully complete their studies



Networking

Professionals from countries all over the world attend TECH, allowing students to establish a large network of contacts that may prove useful to them in the future.

100,000+

200+

executives trained each year

different nationalities



Empowerment

Students will grow hand in hand with the best companies and highly regarded and influential professionals. TECH has developed strategic partnerships and a valuable network of contacts with major economic players in 7 continents.

500+

collaborative agreements with leading companies



Talent

This program is a unique initiative to allow students to showcase their talent in the business world. An opportunity that will allow them to voice their concerns and share their business vision.

After completing this program, TECH helps students show the world their talent.



Multicultural Context

While studying at TECH, students will enjoy a unique experience. Study in a multicultural context. In a program with a global vision, through which students can learn about the operating methods in different parts of the world, and gather the latest information that best adapts to their business idea.

TECH students represent more than 200 different nationalities.



Learn with the best

In the classroom, TECH's teaching staff discuss how they have achieved success in their companies, working in a real, lively, and dynamic context. Teachers who are fully committed to offering a quality specialization that will allow students to advance in their career and stand out in the business world.

Teachers representing 20 different nationalities.



At TECH, you will have access to the most rigorous and up-to-date case studies in the academic community"

Why Study at TECH? | 09 tech

TECH strives for excellence and, to this end, boasts a series of characteristics that make this university unique:



Analysis

TECH explores the student's critical side, their ability to question things, their problem-solving skills, as well as their interpersonal skills.



Academic Excellence

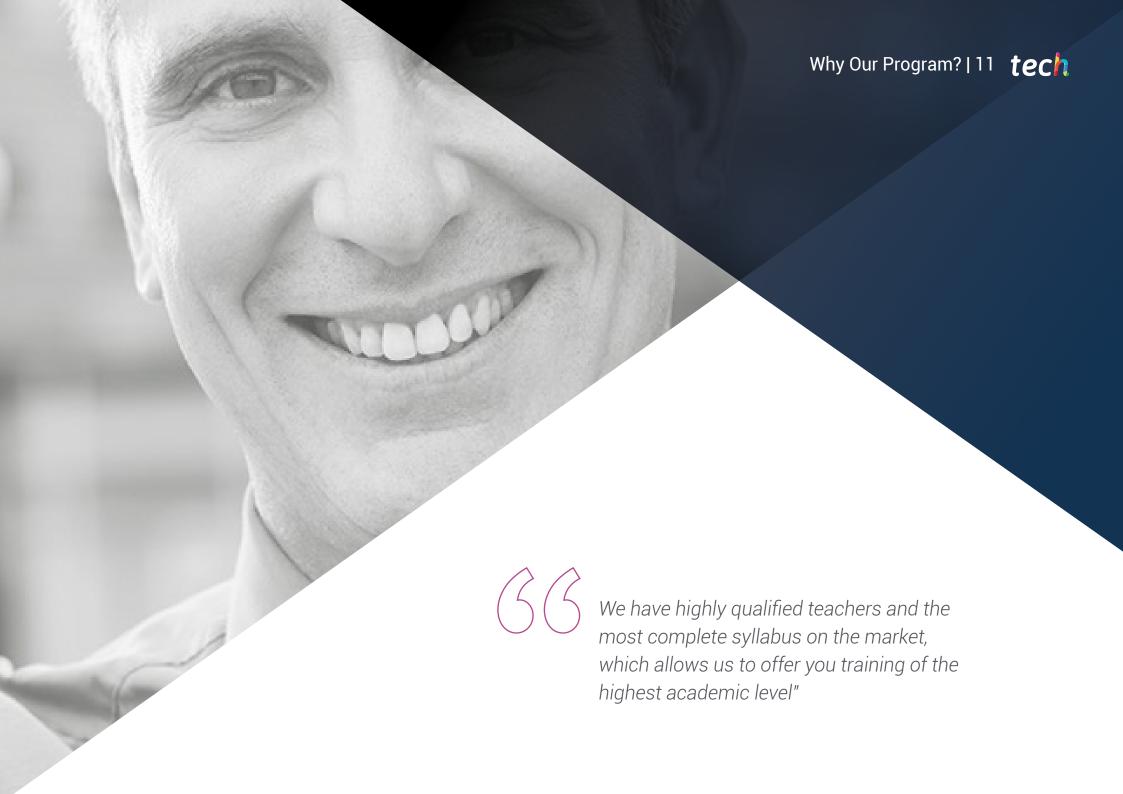
TECH offers students the best online learning methodology. The university combines the Relearning method (a postgraduate learning methodology with the highest international rating) with the Case Study. A complex balance between tradition and state-of-the-art, within the context of the most demanding academic itinerary.



Economy of Scale

TECH is the world's largest online university. It currently boasts a portfolio of more than 10,000 university postgraduate programs. And in today's new economy, **volume + technology = a ground-breaking price**. This way, TECH ensures that studying is not as expensive for students as it would be at another university.





tech 12 | Why Our Program?

This program will provide students with a multitude of professional and personal advantages, particularly the following:



A significant career boost

By studying at TECH, students will be able to take control of their future and develop their full potential. By completing this program, students will acquire the skills required to make a positive change in their career in a short period of time.

70% of participants achieve positive career development in less than 2 years.



Develop a strategic and global vision of companies

TECH offers an in-depth overview of general management to understand how each decision affects each of the company's different functional areas.

Our global vision of companies will improve your strategic vision.



Consolidate the student's senior management skills

Studying at TECH means opening the doors to a wide range of professional opportunities for students to position themselves as senior executives, with a broad vision of the international environment.

You will work on more than 100 real senior management cases.



Take on new responsibilities

The program will cover the latest trends, advances and strategies, so that students can carry out their professional work in a changing environment.

45% of graduates are promoted internally.



Access to a powerful network of contacts

TECH connects its students to maximize opportunities. Students with the same concerns and desire to grow. Therefore, partnerships, customers or suppliers can be shared.

You will find a network of contacts that will be instrumental for professional development.



Thoroughly develop business projects

Students will acquire a deep strategic vision that will help them develop their own project, taking into account the different areas in companies.

20% of our students develop their own business idea.



Improve soft skills and management skills

TECH helps students apply and develop the knowledge they have acquired, while improving their interpersonal skills in order to become leaders who make a difference.

Improve your communication and leadership skills and enhance your career.



Be part of an exclusive community

Students will be part of a community of elite executives, large companies, renowned institutions, and qualified professors from the most prestigious universities in the world: the TECH Technological University community.

We give you the opportunity to train with a team of world renowned teachers.





tech 16 | Objectives

TECH makes the goals of their students their own goals too. Working together to achieve them.

The **Postgraduate Diploma in Information Use in Data Science** qualifies students to:



Perform data analyses



Determine the best practices for data management according to its typology and uses



Unify diverse data and achieve consistency of information

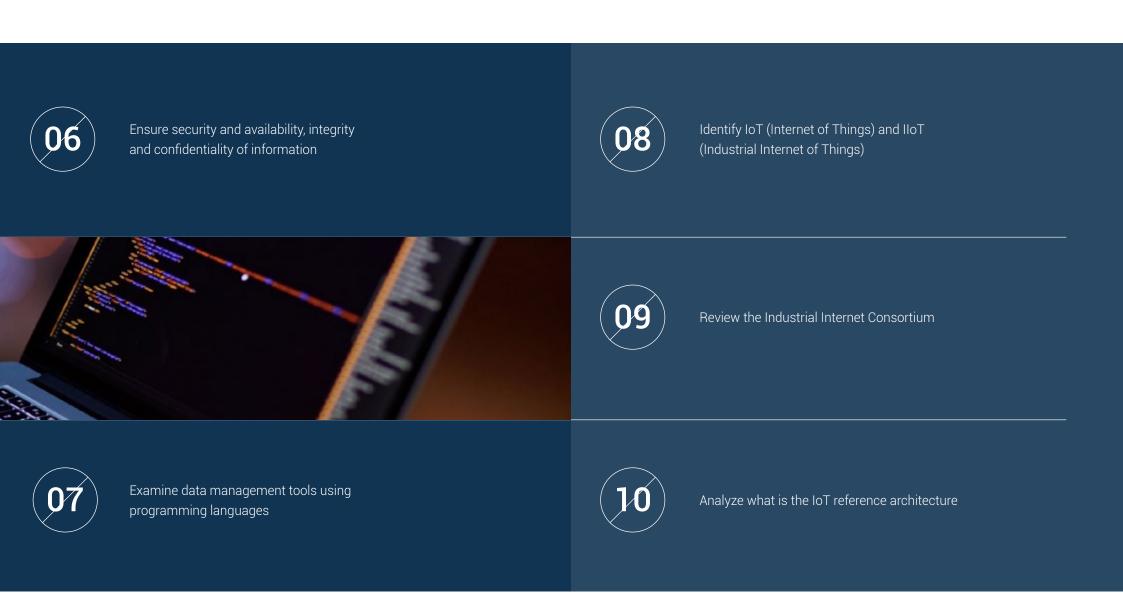




Produce relevant, effective information for decision making



Establish data access and reuse policies of data





Address IoT sensors and devices and their classification



Determine the requirements of mass data usage systems



Identify communications protocols and technologies used in IoT.



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Examine the different IoT Cloud platforms: general purpose, industrial, open source



Examine different data models and analyze databases



Analyze the key functionalities for distributed systems and their importance in different types of systems



Analyze the way in which databases store and retrieve information



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Understand the different replication models and associated issues

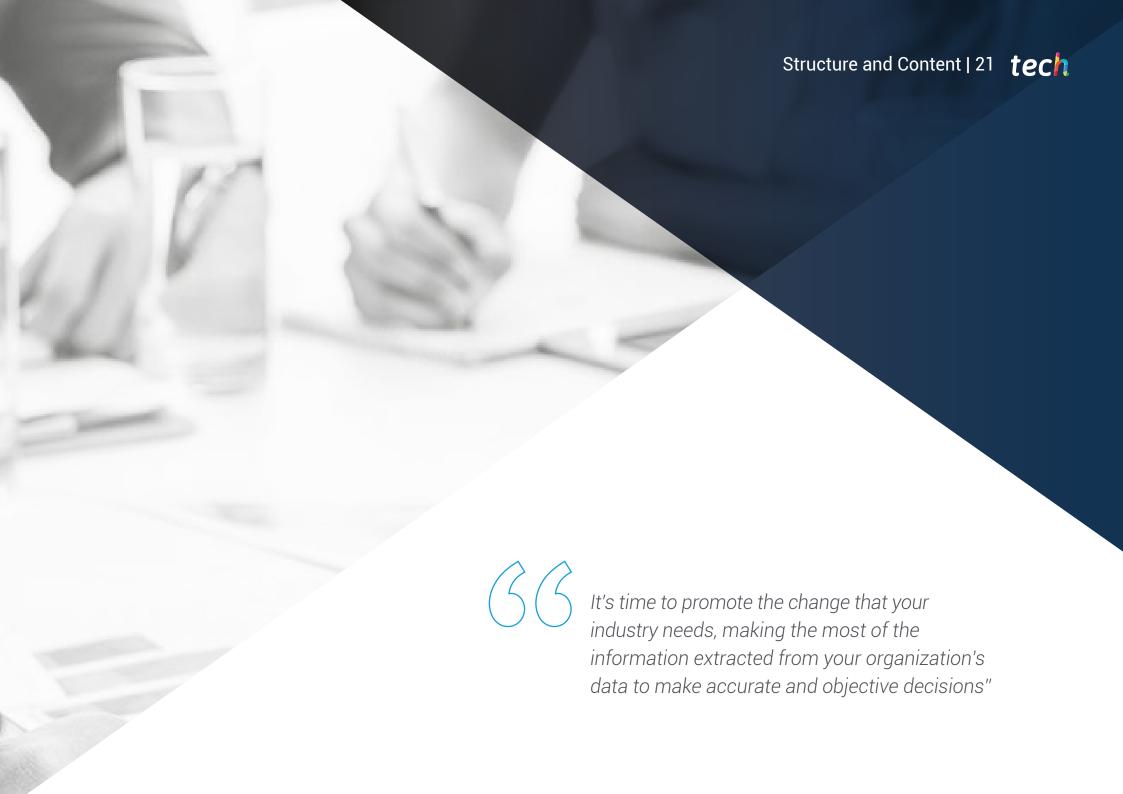


Assess which widely used applications use the fundamentals of distributed systems to design their systems.



Develop ways of partitioning and distributed transactions





tech 22 | Structure and Content

Syllabus

The Postgraduate Diploma in Information Use in Data Science at TECH Technological University will become a unique experience for computer engineers looking to face new work challenges.

In order to enhance the students' theoretical and managerial skills, the program content will enable them to manage a data structure, focusing on the typology and life cycle of data.

Throughout the 450 hours of the educational program, the student will understand the importance of IoT (Internet of Thing), which has become a revolution in the sector as it is the technological solution for companies seeking to create an ecosystem that enables industrial solutions. Therefore, it is an immersion of real business situations in the academic classroom.

Moving forward in the agenda, the technologies and tools on the market will be addressed, examining the principles of the most important components in a system that has to be designed to meet the challenge of big data. Knowing this information is valuable for the students, since it will favor their possibilities of aspiring to an important managerial position within their work team.

This Postgraduate Diploma takes place over 6 months and is divided into 3 modules:

Module 1 Data and Information Management and Manipulation in Data Science

Module 2 IoT Devices and Platforms as the Basis for Data Science

Module 3 Architecture and Systems for Intensive Use of Data



Where, When and How is it Taught?

TECH offers the possibility of developing this Postgraduate Diploma in Information Use in Data Science completely online. Over the course of 6 months, you will be able to access all the contents of this program at any time, allowing you to self-manage your study time.

A unique, key, and decisive educational experience to boost your professional development and make the definitive leap.

tech 24 | Structure and Content

Mod	dule 1 . Data and Information Manage	ment an	d Manipulation for Data Science				
	Statistics. Variables, Indices and Ratios Statistics Statistical Dimensions	1.2. 1.2.1.	71	1.3. 1.3.1.	Characterization and Categories Data Knowledge from the Measurements Centralization Measurements Measures of Dispersion	1.4. 1.4.1	Correlation Data Knowledge from the Graph Visualization According to Type of Data Interpretation of Graphic Information
1.5. 1.5.1	•	1.6. 1.6.1.	Distributions Data Collection Methodology of Data Collection Data Collection Tools	1.7. 1.7.1.	Data Collection Channels Data Cleaning Phases of Data Cleansing Data Quality	1.8.	Data Manipulation (with R) Data Analysis, Interpretation and Evaluation of Results Statistical Measures
1.9.	Relationship Indices Data Mining Data Warehouse Components	1.10.	Design Data Availability Access Uses	1.10	.3. Security/safety		
Mod	dule 2. IoT Devices and Platforms as	the Basi	s for Data Science				
2.1. 2.1.1 2.1.2	3	2.2.2.	Architecture of Reference The Architecture of Reference Layers Components		Sensors and IoT Devices Principal Components Sensors and Actuators		Communications and Protocols Protocols. OSI Model Communication Technologies
2.5. 2.5.1 2.5.2 2.5.3			Data Management on IoT Platforms Data Management Mechanisms. Open Data Data Exchange and Visualization	2.7. 2.7.1. 2.7.2.	IoT Security Requirements and Security Areas Security Strategies in IIoT	2.8. 2.8.1. 2.8.2.	Applications of IoT Intelligent Cities Health and Fitness
2.8.4 2.9. 2.9.1 2.9.2	 Smart Home Other Applications Applications of IIoT Fabrication Transport Energy 	2.9.5. 2.10 2.10.1	Agriculture and Livestock Other Sectors Industry 4.0 IORT (Internet of Robotics Things) Additive Manufacturing	2.10.3	Big Data Analytics		

Module 3. Architecture and Systems for Intensive Use of Data										
3.1.2.	Non-Functional Requirements: Pillars of Big Data Applications Reliability Adaptation Maintainability	3.2.2.	Data Models Relational Model Document Model Graph Type Data Model		Databases. Storage Management and Data Recovery Hash Indexes Log Structured Storage Trees B	3.4.2. 3.4.3.	Data Coding Formats Language-Specific Formats Standardized Formats Binary Coding Formats Data Stream Between Processes			
3.5.2.	Replication Objectives of Replication Replication Models Problems with Replication	3.6. 3.6.1. 3.6.2. 3.6.3.		3.7.1. 3.7.2.	Partitions Forms of Partitioning Secondary Index Interaction and Partitioning Partition Rebalancing	3.8. 3.8.1. 3.8.2. 3.8.3.	Offline Data Processing Batch Processing Distributed File Systems MapReduce			
	Data Processing in Real Time Types of Message Broker Representation of Databases as Data Streams Data Stream Processing	3.10. 3.10.	. Practical Applications in Business 1. Consistency in Readings 2. Holistic Focus of Data 3. Scaling of a Distributed Service							





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.



tech 28 | Methodology

TECH Business School uses the 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.





This program prepares you to face business challenges in uncertain environments and achieve business success.



Our program prepares you to face new challenges in uncertain environments and achieve success in your career.

A learning method that is different and innovative

This TECH program is an intensive educational program, created from scratch to present executives with challenges and business decisions at the highest level, whether at the national or international level. 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 business reality is taken into account.



You will learn, through collaborative activities and real cases, how to solve complex situations in real business environments"

The case method has been the most widely used learning system among the world's leading business 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 we face in the case method, an action-oriented learning method. Throughout the program, the studies will be presented with multiple real cases. They must integrate all their knowledge, research, argue and defend their ideas and decisions.

tech 30 | Methodology

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.

Our online system will allow you to organize your time and learning pace, adapting it to your schedule. You will be able to access the contents from any device with an internet connection.

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 online business school is the only one in the world licensed to incorporate 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.



Methodology | 31 tech

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. With this methodology we have 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, markets, and financial 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 specialization, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation to 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.

tech 32 | Methodology

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.



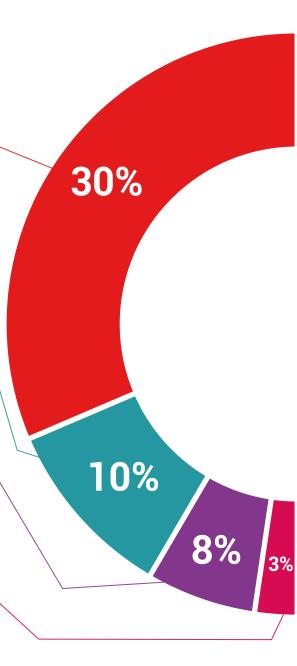
Management Skills Exercises

They will carry out activities to develop specific executive competencies in each thematic area. Practices and dynamics to acquire and develop the skills and abilities that a high-level manager needs to develop in the context of the globalization we live in.



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.





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 senior management 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.

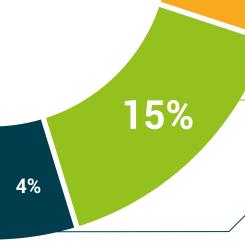


This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".

Testing & Retesting

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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.



30%



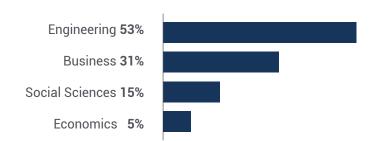


tech 36 | Our Students' Profiles

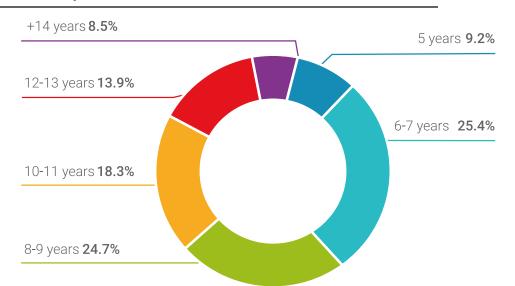
Average Age

Between **35** and **45** years old

Training



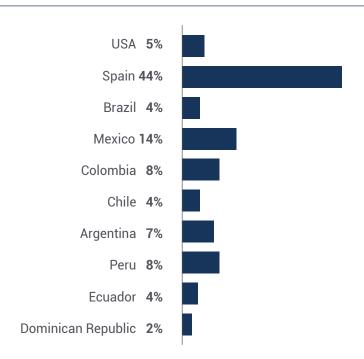
Years of Experience



Academic Profile



Geographical Distribution





Alberto Romero

Process Developer

"When I started the program, I didn't think how much it would change my vision about business and managing a work team. Thanks to it, I have developed my skills to advance my career and opt for an impactful position in my team"





tech 40 | Course Management

Management



D. Peralta Martín-Palomino, Arturo

- CEO and CTO at Prometeus Global Solutions
- CTO en Corporate Technologies in Corporate Technologies
- CTO in Al Shephers GmbH
- Doctorate in Psychology from the University of Castilla La Mancha
- PhD in Economics, Business and Finance from the Camilo José Cela University. Outstanding Award in her PhD
- Master's Degree in Advanced Information Technologies from the University of Castilla la Mancha
- Master MBA+E (Master's Degree in Business Administration and Organisational Engineering) from the University of Castilla la Mancha
- Associate lecturer, teaching undergraduate and master's degrees in Computer Engineering at the University of Castilla la Mancha
- Professor of the Master in Big Data and Data Science at the International University of Valencia
- Lecturer of the Master's Degree in Industry 4.0 and the Master's Degree in Industrial Design and Product Development
- Member of the SMILe Research Group of the University of Castilla La Mancha.

Professors

Ms. Fernández Meléndez. Galina

- Data Analyst in ADN Mobile Solution
- ETL processes, data mining, data analysis and visualisation, establishment of KPI's,
 Dashboard design and implementation, management control. ADN Mobile Solution-Gijón-Spain R development, SQL management, among others
- Pattern determination, predictive modelling, machine learning
- Bachelor's degree in Business Administration. Bicentenaria de Aragua-Caracas University
- Diploma in Planning and Public Finance Venezuelan School of Planning, School of Finance
- Professional Master's Degree in Data Analysis and Business Intelligence. University of Oviedo
- MBA in Business Administration and Management (Escuela De Negocios Europea De Barcelona)
- Master in Big Data and Business Intelligence (Escuela de Negocios Europea de Barcelona)

Mr. Peris Morillo, Luis Javier

- Technical Lead in Capitole Consulting. He leads a team at Inditex in the logistics unit of its open platform
- Senior Technical Lead and Delivery Lead Support at HCL
- Agile Coach and Director of Operations at Mirai Advisory
- Member of the Steering Committee as Chief Operating Officer
- Developer, Team Lead, Scrum Master, Agile Coach, Product Manager in DocPath
- Higher Engineering in Computer Science by the ESI of Ciudad Real (UCLM)
- Postgraduate in Project Management by CEOE Confederación Española de Organizaciones Empresariales (Spanish Confederation of Business Organisations)
- 50+ MOOCs taken, taught by renowned universities such as Stanford University, Michigan

University, Yonsei University, Polytechnic University of Madrid, etc

• Several certifications, some of the most notable or recent ones are Azure Fundamentals

Mr. Tato Sánchez, Rafael

- Project Management INDRA SISTEMAS S.A.
- Technical Director INDRA SISTEMAS S.A.
- Systems Engineer ENA TRÁFICO S.A.U.
- IFCD048PO. Software Project Management and Development Methodology with SCRUM
- Coursera: Machine Learning
- Udemy: Deep Learning A-Z. Hands-on Artificial Neural Networks
- Coursera: IBM: Fundamentals of Scalable Data Science
- Coursera: IBM: Applied AI with Deep Learning
- Coursera: IBM: Advance Machine Learning and Signal Processing
- Degree in Industrial Electronics and Automation Engineering from the European University of Madrid
- Master's Degree in Industrial Engineering from the European University of Madrid
- Master's Degree in Industry 4.0 by the International University of La Rioja (UNIR)
- * Professional certification. SSCE0110. Teaching for vocational training for employment





tech 44 | Impact on Your Career

If you want to make a positive change in your profession, the Postgraduate Diploma in Information Use in Data Science will help you achieve it.

Are you ready to take the leap? Excellent professional development awaits you

TECH's Postgraduate Diploma in Information Use in Data Science is an intensive program that helps students prepare to meet the business challenges related to data analytics. The main objective is to promote personal and professional growth. Helping students achieve success.

If you want to improve yourself, make a positive change professionally and network with the best, this is the place for you.

Invest in yourself and learn with us. You will see the improvement you are looking for on the first day of class.

When the change occurs

During the program 67%

After 2 years 21%

Type of change

Internal Promotion 46%
Change of Company 42%
Entrepreneurship 12%

Salary increase

This program represents a salary increase of more than **25.33%** for our students.

\$22,900

A salary increase of

25.33%

\$28,700





tech 48 | Benefits for Your Company

Developing and retaining talent in companies is the best long-term investment.



Intellectual Capital and Talent Growth

The professional will introduce the company to new concepts, strategies, and perspectives that can bring about significant changes in the organization.



Retaining high-potential executives to avoid talent drain

This program strengthens the link between the company and the professional and opens new avenues for professional growth within the company.



Building agents of change

The student will be able to make decisions in times of uncertainty and crisis, helping the organization overcome obstacles.



Increased international expansion possibilities

Thanks to this program, the company will come into contact with the main markets in the world economy.





Project Development

The professional can work on a real project or develop new projects in the field of R&D or Business Development of your company.



Increased competitiveness

This Postgraduate Diploma will equip your professionals with the skills to take on new challenges and therefore drive the organization forward.







tech 52 | Certificate

This **Postgraduate Diploma in Information Use in Data Science** contains the most complete and up-to-date educational program the market.

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

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

Title: Postgraduate Diploma in Information Use in Data Science Official No of Hours: **450 h**.



^{*}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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