

# Postgraduate Diploma Techniques, Algorithms and Tools for Data Science



## Postgraduate Diploma Techniques, Algorithms and Tools for 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.techtute.com/in/school-of-business/postgraduate-diploma/postgraduate-diploma-techniques-algorithms-tools-data-science](http://www.techtute.com/in/school-of-business/postgraduate-diploma/postgraduate-diploma-techniques-algorithms-tools-data-science)

# Index

01

Welcome

---

*p. 4*

02

Why Study at TECH?

---

*p. 6*

03

Why Our Program?

---

*p. 10*

04

Objectives

---

*p. 14*

05

Structure and Content

---

*p. 20*

06

Methodology

---

*p. 28*

07

Our Students' Profiles

---

*p. 36*

08

Course Management

---

*p. 40*

09

Impact on Your Career

---

*p. 44*

10

Benefits for Your Company

---

*p. 48*

11

Certificate

---

*p. 52*

# 01 Welcome

Data science dominates virtually every area of business today. From cybersecurity to finance, medicine or industry, the applications of this new data revolution are almost infinite, and also represent great opportunities for professionals looking to improve their own work. For this reason, TECH has developed this program, which focuses on the most innovative techniques, algorithms and tools in Data Science, with which students will greatly improve their professional skills and, at the same time, will be able to opt for management positions of greater prestige and economic remuneration in any business field that is proposed.



Postgraduate Diploma in Techniques, Algorithms and Tools for Data Science.  
TECH Technological University



“

*Develop skills to convert data into information from which knowledge can be extracted through critical thinking"*

02

# Why Study at TECH?

TECH is the world's largest 100% online business school. It is an elite business school, with a model based on the highest academic standards. A world-class centre for intensive managerial skills training.



“

*TECH is a university at the forefront of technology, and puts all its resources at the student's disposal to help them achieve entrepreneurial success"*



## 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+**  
executives trained each year

**200+**  
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.





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 groundbreaking price**. This way, TECH ensures that studying is not as expensive for students as it would be at another university.



### 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"*

03

# Why Our Program?

Studying this TECH program means increasing the chances of achieving professional success in senior business management.

It is a challenge that demands effort and dedication, but it opens the door to a promising future. Students will learn from the best teaching staff and with the most flexible and innovative educational methodology.



“

*We have highly qualified teachers and the most complete syllabus on the market, which allows us to offer you training of the highest academic level"*

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

**01**

### 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.*

**02**

### 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.*

**03**

### 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.*

**04**

### 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.*

05

### 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.*

06

### 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.*

07

### 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.*

08

### 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.*

# 04 Objectives

This program aims to guide computer engineers towards academic, professional and managerial excellence. For this reason, a series of objectives have been developed to examine the main techniques of selection, pre-processing and transformation prior to a data mining process.





“

*Develop the fundamental skills of a team leader and aspire to excellence through academic knowledge”*



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

The Postgraduate Diploma in Techniques, Algorithms and Tools for Data Science will enable the student to:

01

Develop the skills to convert data into information from which knowledge can be extracted

04

Develop skills to solve practical cases using Data Science techniques

02

Determine the main features of a Dataset, its structure, components and the implications of its distribution in modeling

03

Supporting decision making by performing comprehensive data analysis in advance

05

Establish the most appropriate general tools and methods for modeling each Dataset based on the pre-processing performed



06

Evaluate the results in an analytical way, understanding the impact of the chosen strategy on the various metrics

08

Generate specialized knowledge about the statistical prerequisites for any data analysis and evaluation



09

Develop the necessary skills for data identification, preparation and transformation

07

Demonstrate critical analysis of the results obtained after applying pre-processing or modeling methods

10

Evaluate the various methodologies presented and identify advantages and drawbacks

11

Examine the problems in high dimensional data environments

14

Develop advanced knowledge of the different existing data preparation techniques for data cleaning, normalization and transformation

12

Implement algorithms used for data preprocessing



13

Demonstrate the ability to interpret data visualization for descriptive analysis

15

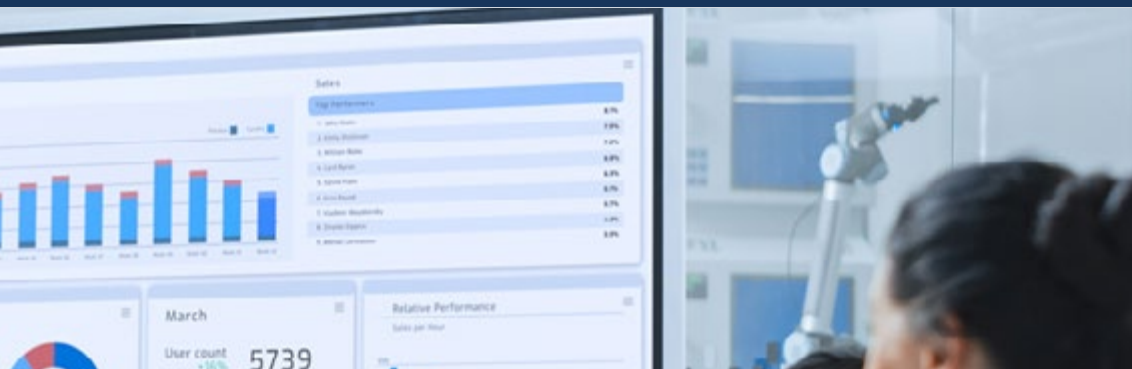
Analyze the step from information to knowledge

16

Develop the different types of machine learning

18

Implement the different machine learning algorithms



19

Identify probabilistic reasoning models

17

Examine metrics and scores to quantify model quality

20

Lay the foundations for deep learning

05

# Structure and Content

The Postgraduate Diploma in Techniques, Algorithms and Tools for Data Science is delivered 100% online to ensure compliance under the parameters of the students. For this reason, the program has a duration of six months, making it a unique and stimulating experience to guarantee the success of the graduates.



“

*Evaluate the results in an analytical way, understanding the impact of the chosen strategy on the different metrics and become a Postgraduate Diploma in your sector"*

## Syllabus

The Postgraduate Diploma in Techniques, Algorithms and Tools for Data Science of TECH Technological University, has an up-to-date syllabus to the demands of the current labor market, providing the fundamental knowledge to face a managerial challenge of an IT department in a company.

The entire content of the program is designed to enhance the theoretical and managerial skills of computer engineers interested in the problem of choosing a tool that meets the demands of the company in which they work every day.

Throughout 450 hours of specialization, the student will be able to analyze the data, visualize the sets and draw conclusions about the required processing to be performed prior to modeling and its influence on the results. Therefore, it is an immersion of real business situations in the academic classroom.

As the Syllabus progresses, special emphasis will be placed on extracting the maximum value from data to generate specialized knowledge about statistics and inference procedures. This will allow understanding and examining the most advanced data cleaning techniques, transformation, dimensionality reduction, as well as feature and instance selection.

Based on the above, the syllabus will be complemented by a comprehensive study to present the theory of neural networks in a didactic and practical way, favoring the interest of engineers to learn about their application in a managerial position. In this way, it becomes a syllabus that meets the needs of students and prepares them to face any professional challenge at the IT and management level.

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

### Module 1

Data Science Tools

### Module 2

Data Mining: Selection, Pre-Processing and Transformation

### Module 3

Design and Development of Intelligent Systems





### Where, When and How is it Taught?

TECH offers the possibility of developing this Postgraduate Diploma in Techniques, Algorithms and Tools for 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.*

## Module 1. Data Science Tools

### 1.1. Data Science

- 1.1.1. Data Science
- 1.1.2. Advanced Tools for Data Scientists

### 1.2. Data, Information and Knowledge

- 1.2.1. Data, Information and Knowledge
- 1.2.2. Types of Data
- 1.2.3. Data Sources

### 1.3. From Data to Information

- 1.3.1. Data Analysis
- 1.3.2. Types of Analysis
- 1.3.3. Extraction of Information from a Dataset

### 1.4. Extraction of Information Through Visualization

- 1.4.1. Visualization as an Analysis Tool
- 1.4.2. Visualization Methods
- 1.4.3. Visualization of a Data Set

### 1.5. Data Quality

- 1.5.1. Quality Data
- 1.5.2. Data Cleaning
- 1.5.3. Basic Data Pre-Processing

### 1.6. Dataset

- 1.6.1. Dataset Enrichment
- 1.6.2. The Curse of Dimensionality
- 1.6.3. Modification of Our Data Set

### 1.7. Unbalance

- 1.7.1. Classes of Unbalance
- 1.7.2. Unbalance Mitigation Techniques
- 1.7.3. Balancing a Dataset

### 1.8. Unsupervised Models

- 1.8.1. Unsupervised Model
- 1.8.2. Methods
- 1.8.3. Classification with Unsupervised Models

### 1.9. Supervised Models

- 1.9.1. Supervised Model
- 1.9.2. Methods
- 1.9.3. Classification with Supervised Models

### 1.10. Tools and Good Practices

- 1.10.1. Good Practices for Data Scientists
- 1.10.2. The Best Model
- 1.10.3. Useful Tools

**Module 2. Data Mining. Selection, Pre-Processing and Transformation****2.1. Statistical Inference**

- 2.1.1. Descriptive Statistics vs. Statistical Inference
- 2.1.2. Parametric Procedures
- 2.1.3. Non-Parametric Procedures

**2.2. Exploratory Analysis**

- 2.2.1. Descriptive Analysis
- 2.2.2. Visualization
- 2.2.3. Data Preparation

**2.3. Data Preparation**

- 2.3.1. Integration and Data Cleaning
- 2.3.2. Normalization of Data
- 2.3.3. Transforming Attributes

**2.4. Missing Values**

- 2.4.1. Treatment of Missing Values
- 2.4.2. Maximum Likelihood Imputation Methods
- 2.4.3. Missing Value Imputation Using Machine Learning

**2.5. Noise in the Data**

- 2.5.1. Noise Classes and Attributes
- 2.5.2. Noise Filtering
- 2.5.3. The Effect of Noise

**2.6. The Curse of Dimensionality**

- 2.6.1. Oversampling
- 2.6.2. Undersampling
- 2.6.3. Multidimensional Data Reduction

**2.7. From Continuous to Discrete Attributes**

- 2.7.1. Continuous Data Vs. Discrete Data
- 2.7.2. Discretization Process

**2.8. The Data**

- 2.8.1. Data Selection
- 2.8.2. Prospects and Selection Criteria
- 2.8.3. Selection Methods

**2.9. Instance Selection**

- 2.9.1. Methods for Instance Selection
- 2.9.2. Prototype Selection
- 2.9.3. Advanced Methods for Instance Selection

**2.10. Data Pre-Processing in Big Data Environments**

- 2.10.1. Big Data
- 2.10.2. Classical Versus Massive Pre-processing
- 2.10.3. Smart Data

**Module 3. Design and Development of Intelligent Systems**

**3.1. Data Pre-Processing**

- 3.1.1. Data Pre-Processing
- 3.1.2. Data Transformation
- 3.1.3. Data Mining

**3.2. Machine Learning**

- 3.2.1. Supervised and Unsupervised Learning
- 3.2.2. Reinforcement Learning
- 3.2.3. Other Learning Paradigms

**3.3. Classification Algorithms**

- 3.3.1. Inductive Machine Learning
- 3.3.2. SVM and KNN
- 3.3.3. Metrics and Scores for Ranking

**3.4. Regression Algorithms**

- 3.4.1. Lineal Regression, Logistical Regression and Non-Lineal Models
- 3.4.2. Time Series
- 3.4.3. Metrics and Scores for Regression

**3.5. Clustering Algorithms**

- 3.5.1. Hierarchical Clustering Techniques
- 3.5.2. Partitional Clustering Techniques
- 3.5.3. Metrics and Scores for Clustering

**3.6. Association Rules Techniques**

- 3.6.1. Methods for Rule Extraction
- 3.6.2. Metrics and Scores for Association Rule Algorithms

**3.7. Advanced Classification Techniques. Multiclassifiers**

- 3.7.1. Bagging Algorithms
- 3.7.2. Random "Forests Sorter"
- 3.7.3. "Boosting" for Decision Trees

**3.8. Probabilistic Graphical Models**

- 3.8.1. Probabilistic Models
- 3.8.2. Bayesian Networks: Properties, Representation and Parameterization
- 3.8.3. Other Probabilistic Graphical Models

**3.9. Neural Networks.**

- 3.9.1. Machine Learning with Artificial Neural Networks
- 3.9.2. Feedforward Networks

**3.10. Deep Learning**

- 3.10.1. Deep Feedforward Networks
- 3.10.2. Convolutional Neural Networks and Sequence Models
- 3.10.3. Tools for Implementing Deep Neural Networks



“

*With a practical and dynamic methodology, you will become a leader by understanding how data analysis and management works”*



# 06

# 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"*



## 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.

“

*At TECH, you will experience a learning methodology that is shaking the foundations of traditional universities around the world”*



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



### **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.

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

## 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.





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.



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.





### 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 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

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.



07

# Our Students' Profiles

The Postgraduate Diploma in Techniques, Algorithms and Tools for Data Science is aimed at professionals in the field of computer engineering who are looking for a specific specialization in data management, without ignoring systems or software engineers who also want to focus their professional career on data science. Therefore, the program is made up of a diversity of participants that also enriches the student's educational experience, offering them an opportunity to forge new professional ties.







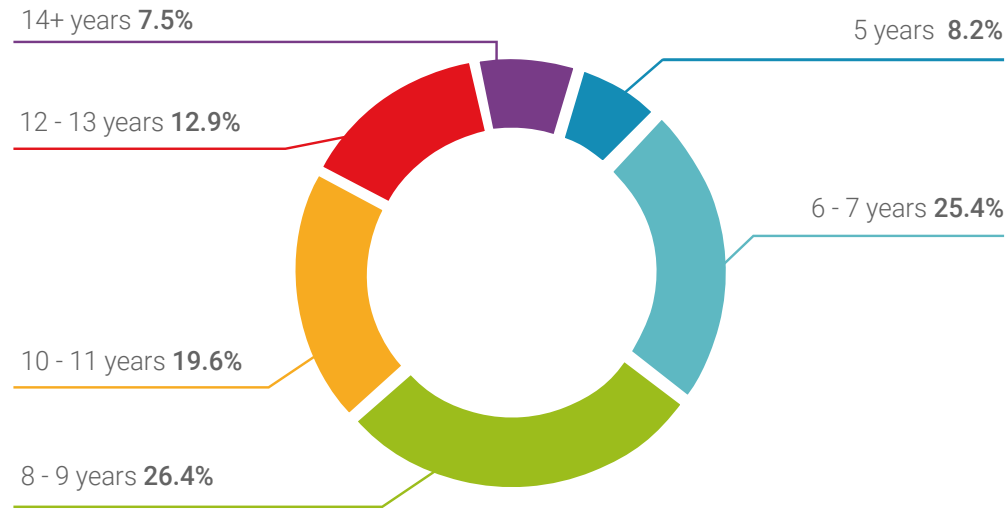
“

*Enroll now in this Postgraduate Diploma in TECH and do not miss the opportunity to obtain a quality salary improvement in your professional career”*

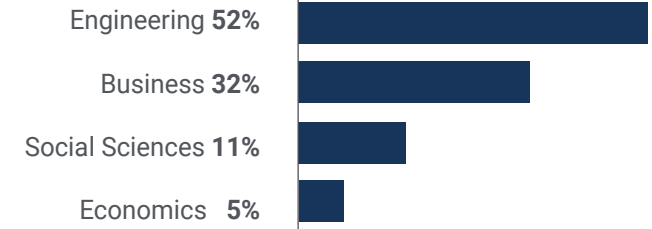
### Average Age

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

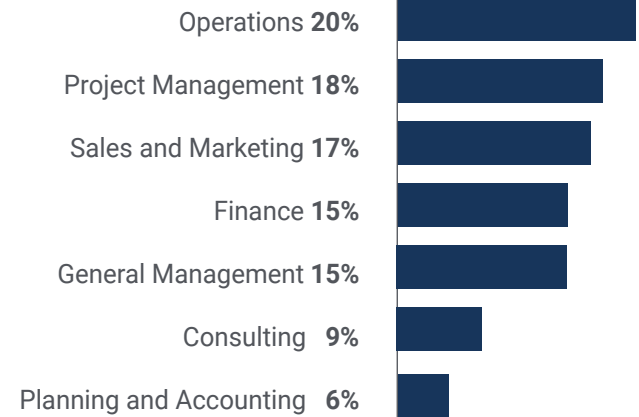
### Years of Experience



### Training

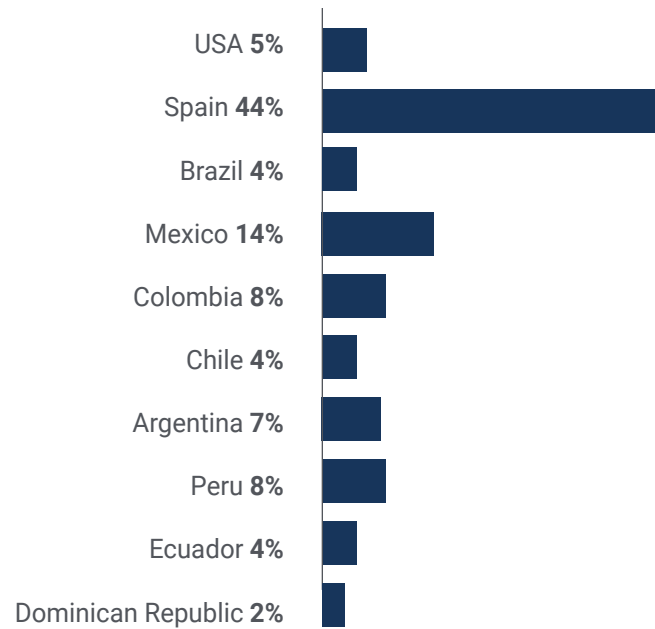


### Academic Profile



## Geographical Distribution

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## Javier Zambrano

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Business Analyst

*"This program has become an excellent opportunity to learn about data mining and the tools to analyze it. In addition, because of its online modality, I have continued with my work activities without any interruption. In short, the best academic experience"*

08

# Course Management

At TECH we have a specialized teaching staff to ensure a quality education in line with current market demands. Therefore, the Postgraduate Diploma in Techniques, Algorithms and Tools for Data Science has brought together a group of highly qualified professionals with extensive experience in the field. That is why computer engineers interested in this field can be sure to receive current and specific knowledge of this booming international field.





“

*Learn from the best and  
manage an elite team"*

## Management



### Dr. Peralta Martín-Palomino, Arturo

- ♦ CEO and CTO at Prometheus Global Solutions
- ♦ CTO at Corporate Technologies in Corporate Technologies
- ♦ CTO at AI 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. Pedrajas Parabá, Elena

- ◆ Business Analyst in Management Solutions in Madrid
- ◆ Collaborator with the Department of Numerical Analysis at the University of Cordoba Professional Experience
- ◆ Researcher in the Department of Computer Science and Numerical Analysis at the University of Córdoba
- ◆ Researcher at the Singular Center for Research in Intelligent Technologies in Santiago de Compostela
- ◆ Degree in Computer Engineering Master's Degree in Data Science and Computer Engineering Teaching Experience

### Mr. Montoro Montarroso, Andrés

- ◆ Researcher in the SMILe Group at the University of Castilla-La Mancha
- ◆ Data Scientist at Prometheus Global Solutions
- ◆ Graduate in Computer Engineering from the University of Castilla-La Mancha
- ◆ Master's Degree in Data Science and Computer Engineering from the University of Granada
- ◆ Guest lecturer in the subject of Knowledge-Based Systems at the Escuela Superior de Informática de Ciudad Real, giving the lecture: "Advanced Artificial Intelligence Techniques: Search and Analysis of Potential Social Media Radicals"
- ◆ Guest lecturer in the subject of Data Mining at the Escuela Superior de Informática de Ciudad Real giving the lecture: "Applications of Natural Language Processing: Fuzzy Logic to the analysis of messages in social networks"
- ◆ Speaker at the Seminar on Corruption Prevention in Public Administrations and Artificial Intelligence. Faculty of Law and Social Sciences of Toledo. Conference entitled "Artificial Intelligence Techniques". Speaker at the first International Seminar on Administrative Law and Artificial Intelligence (DAIA). Organised by Centro de Estudios Europeos Luis Ortega Álvarez and Institut de Recerca TransJus. Conference entitled "Sentiment Analysis for the prevention of hate speech on social media"

09

# Impact on Your Career

TECH is aware of the effort that its students must make to complete an educational program of these characteristics, so all teachers and professionals are focused on ensuring that the student obtains the greatest benefits after completing the program. The high quality didactic material, together with the transversal skills and competencies acquired in the educational program, will be the graduate's great asset to opt for better positions at the end of this program.





“

*This is your opportunity to generate a positive change in your professional career. Discover a new horizon with this Postgraduate Diploma"*

*If you want to make a positive change in your profession, the Postgraduate Diploma in Techniques, Algorithms and Tools for Data Science will help you achieve it.*

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

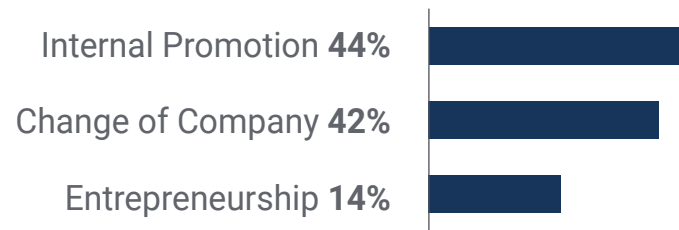
TECH's Postgraduate Diploma in Techniques, Algorithms and Tools for Data Science is an intensive program that seeks the best version of themselves in students, instructing them in complex data management issues so that, upon graduation, they will be able to overcome numerous obstacles and difficulties without any kind of inconvenience.

*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



#### Type of change



### Salary increase

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



10

# Benefits for Your Company

This program is also a great help for companies looking for qualified personnel in data science, since the knowledge is so technical and specific, it is difficult to find professionals with the technical skills, algorithms and tools necessary to succeed with excellence in this sector of information technology.





“

*Develops the implementation of the algorithms used for data pre-processing"*

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

01

### **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.

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02

### **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.

03

### **Building agents of change**

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

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04

### **Increased international expansion possibilities**

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





05

### **Project Development**

The manager can work on a current project or develop new projects in the field of R&D or Business Development within their company.

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06

### **Increased competitiveness**

This program will equip students with the skills to take on new challenges and drive the organization forward.

11

# Certificate

The Postgraduate Diploma in Techniques, Algorithms and Tools for Data Science guarantees students, in addition to the most rigorous and up to date education, access to a Postgraduate Diploma issued by TECH Technological University.



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

This **Postgraduate Diploma in Techniques, Algorithms and Tools for Data Science** contains the most complete and up to date academic 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 reflect the qualification obtained in the Postgraduate Diploma, and meets the requirements commonly demanded by labor exchanges, competitive examinations, and professional career evaluation committees.

**Title: Postgraduate Diploma in Techniques, Algorithms and Tools for Data Science**

**Official N° 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.



## Postgraduate Diploma Techniques, Algorithms and Tools for Data Science

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

# Postgraduate Diploma Techniques, Algorithms and Tools for Data Science

