Postgraduate Certificate

Predictability and Analysis Of Stochastic Phenomena in Data Science

tech technological university

tech technological university

Postgraduate Certificate

Predictability and Analysis of Stochastic Phenomena in Data Science

- Modality: **online**
- Duration: **6 weeks**
- 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/pk/school-of-business/postgraduate-certificate/predictability-analysis-stochastic-phenomena-data-science**

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01

Welcome

Due to the large amount of data generated by a company, the task of analyzing and processing them for their interpretation and use is difficult. In this sense, computer engineers are the ones in charge of knowing and finding different tools that guarantee that this process is carried out in an optimal way. That is why this program proposes to develop the formulation and basic properties of the methods that will speed up the students' work in *Data Science*. At the same time, students will be encouraged to develop their leadership and management skills to face new business challenges.

Postgraduate Certificate in Predictability and Analysis of Stochastic Phenomena in Data Science. TECH Technological University

Data needs to be processed to be useful. With these tools you will get the most out of it"

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.

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"

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.

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

The ultimate goal of this program is to have a group of professionals capable of facing any business challenge that may arise. To do so, they must develop certain knowledge and skills in Big Data. This will be critical to accepting a leadership role in your work team.

There is a great demand for Data Science professionals. With this program you will stand out from the competition"

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

The **Postgraduate Certificate in Predictability and Analysis of Stochastic Phenomena in Data Science** qualifies students to:

01 Analyze time series

02 Develop the formulation and basic properties of univariate time series models

03 Examine the methodology of modeling and prediction of real time series

04 Assess univariate models including outliers

05 Apply dynamic regression models and apply the methodology for the construction of such models from observed series

06 Address the spectral analysis of univariate time series, as well as the fundamentals related to periodogram-based inference and interpretation

07 Estimate the probability and trend in time series for a given time horizon

08 Generate specialized knowledge on Time Series

09 Examine the pattern and characteristics of the Time Series

10 Analyze the most commonly used models for Time Series analysis

11 Determine the most advanced resources and methodology for Time Series analysis

12 Predict the behavior of a time series based on the knowledge of the models studied

05

Structure and Content

For this program, the students are expected to explore and develop their maximum capabilities. For this purpose, a theoretical and practical methodology is presented that will allow a better understanding of the concepts presented. In addition, the content will be available online, so it adapts perfectly to the student's work and personal needs.

Start your path to excellence in the workplace today by understanding the concepts of Time Series"

Syllabus

The Postgraduate Certificate in Predictability and Analysis of Stochastic Phenomena in Data Science of TECH Technological University, will become a complete experience that will help students to generate specialized knowledge about the tools and strategies used in this field.

This will be approached from the perspective of a technology department director. Therefore, the students will develop critical thinking skills that will favor their entrepreneurial advancement.

For this reason, in each class you will have the opportunity to learn, through case studies, the new technologies for data visualization, such as Intelligent Systems or Systems for the virtualization of reality. In addition, you will identify the univariate models that are outliers in companies and the dynamic regression models used to analyze them.

By means of practical cases, students will have a much better understanding of the knowledge imparted. In turn, they will be encouraged to achieve excellence in the field of leadership and management of a technology department in a company. They will understand the needs of the business and be able to propose new and innovative strategies.

This Postgraduate Certificate takes place over 6 weeks with 1 module of study:

Module 1 Predictability and Analysis of Stochastic Phenomena

Where, When and How is it Taught?

TECH offers the possibility of developing this Postgraduate Certificate in Predictability and Analysis of Stochastic Phenomena in Data Science completely online. Over the course of 6 weeks, 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. Predictability and Analysis of Stochastic Phenomena

1.1. Time Series
1.1.1. Time Series
1.1.2. Utility and Applicability
1.1.3. Related Case Studies

1.2. Time Series
1.2.1. Trend Seasonality of ST
1.2.2. Typical Variations
1.2.3. Waste Analysis

1.3. Typology
1.3.1. Stationary
1.3.2. Non-Stationary
1.3.3. Transformations and Settings

1.4. Time Series Schemes
1.4.1. Additive Scheme (Model)
1.4.2. Multiplicative Scheme (Model)
1.4.3. Procedures to Determine the Type of Model

1.5. Basic Forecast Methods
1.5.1. Media
1.5.2. Naive
1.5.3. Seasonal Naive
1.5.4. Method Comparison

1.6. Waste Analysis
1.6.1. Autocorrelation
1.6.2. ACF of Waste
1.6.3. Correlation Test

1.7. Regression in the Context of Time Series
1.7.1. ANOVA
1.7.2. Fundamentals
1.7.3. Practical Applications

1.8. Predictive Methods of Time Series
1.8.1. ARIMA
1.8.2. Exponential Smoothing

1.9. Manipulation and Analysis of Time Series with R
1.9.1. Data Preparation
1.9.2. Identification of Patterns
1.9.3. Model Analysis
1.9.4. Prediction

1.10. Combined Graphical Analysis with R
1.10.1. Normal Situations
1.10.2. Practical Application for the Resolution of Simple Problems
1.10.3. Practical Application for the Resolution of Advanced Problems

Predict the behavior of a time series and be prepared to face any problems they generate as the best in the field of Data Science"

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.

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.

Relearning Methodology

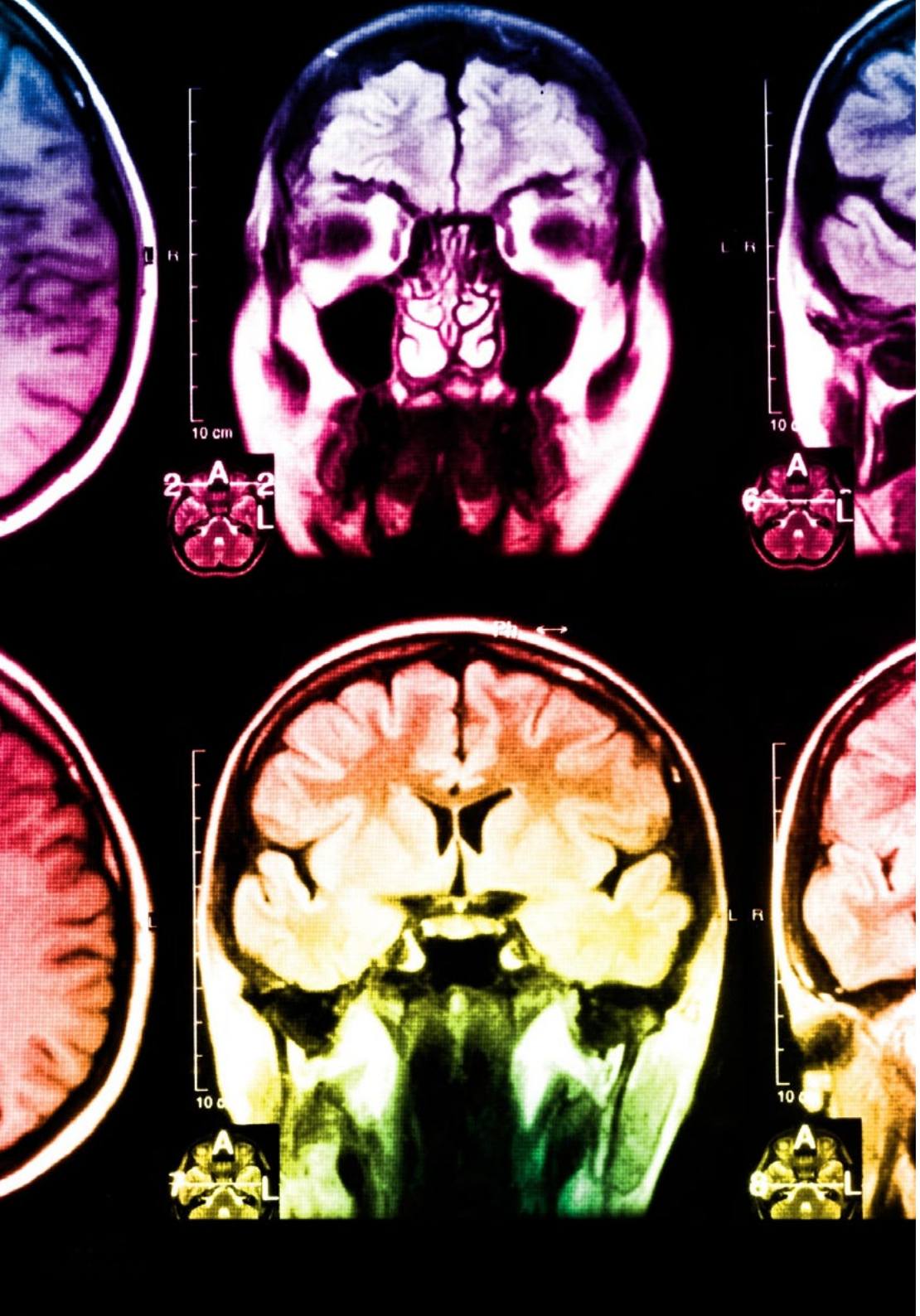
TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines different teaching elements in each lesson.

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.

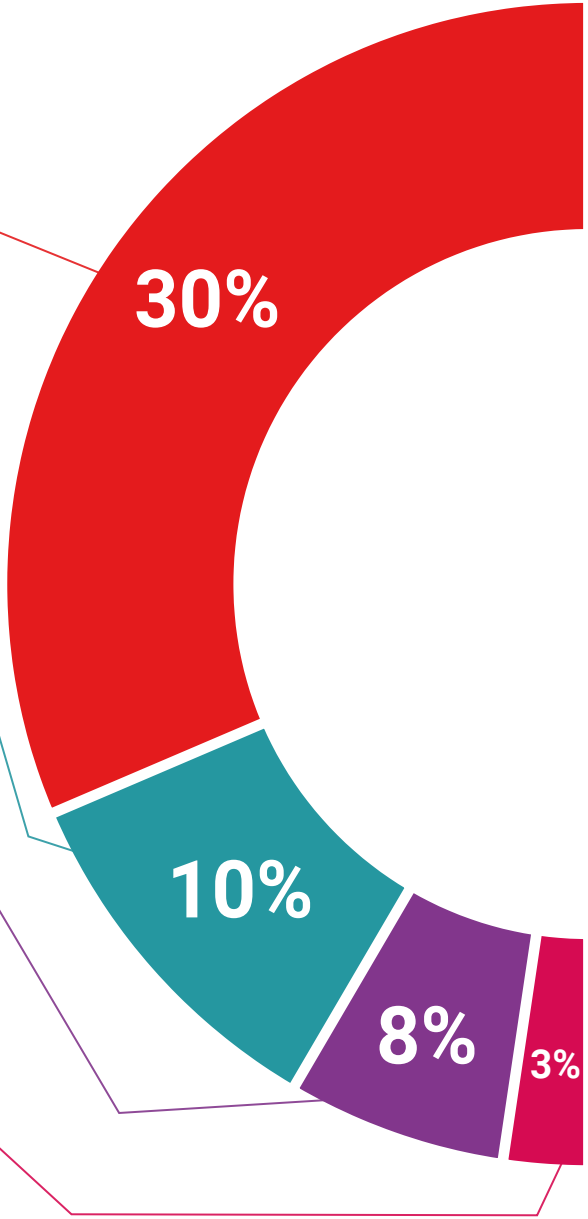
Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

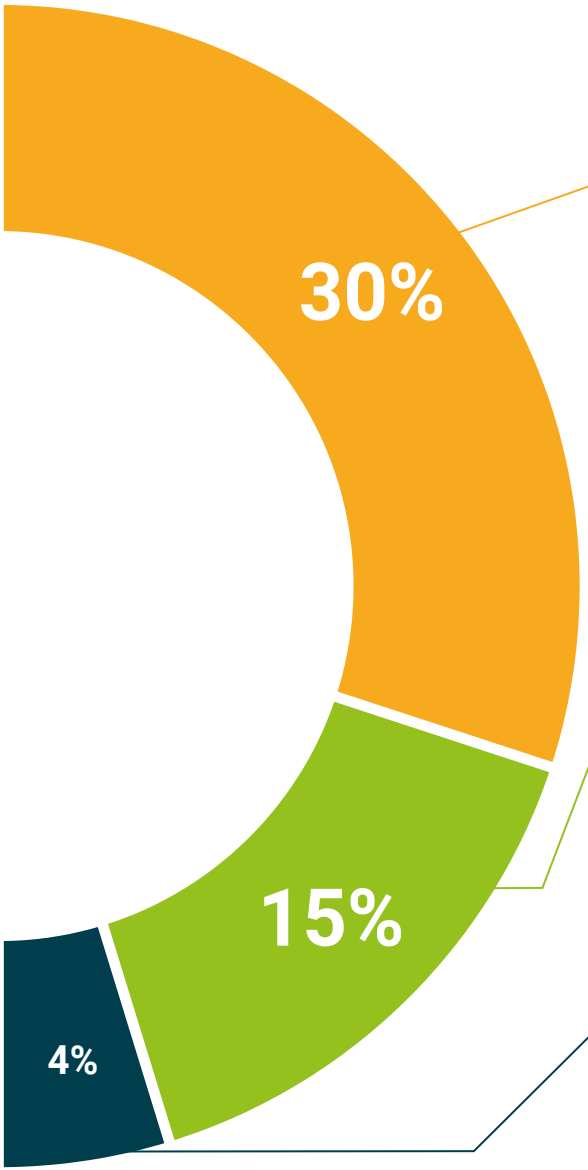
Management Skills Exercises

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 TECH graduates are professionals capable of facing any work challenge. Being analytical, critical and ingenious, they are able to propose innovative solutions in their work team. This makes them capable of leading a work team of excellence. Therefore, this program is designed for computer engineers who are looking to go a step further in their careers.

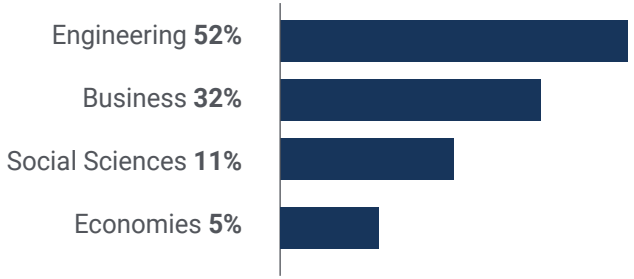
It's time to complete your professional profile with this Data Science program"

Average Age

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

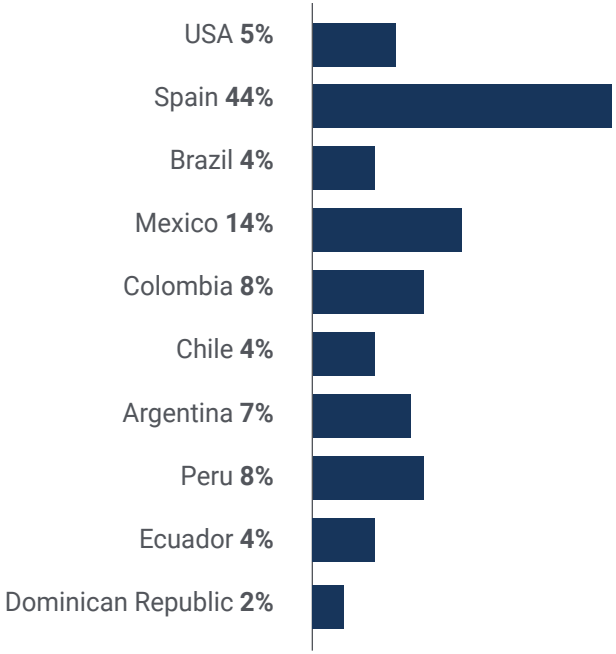
Years of Experience

Training



Academic Profile

Geographical Distribution



Ximena Verdú

Business Analyst in Technology Department

"I was looking for an online program that would allow me to do it after work and this Postgraduate Certificate was the right one. Both the syllabus and the classes are well structured and emphasize the important aspects of the analysis of stochastic phenomena in Data Science"

08

Course Management

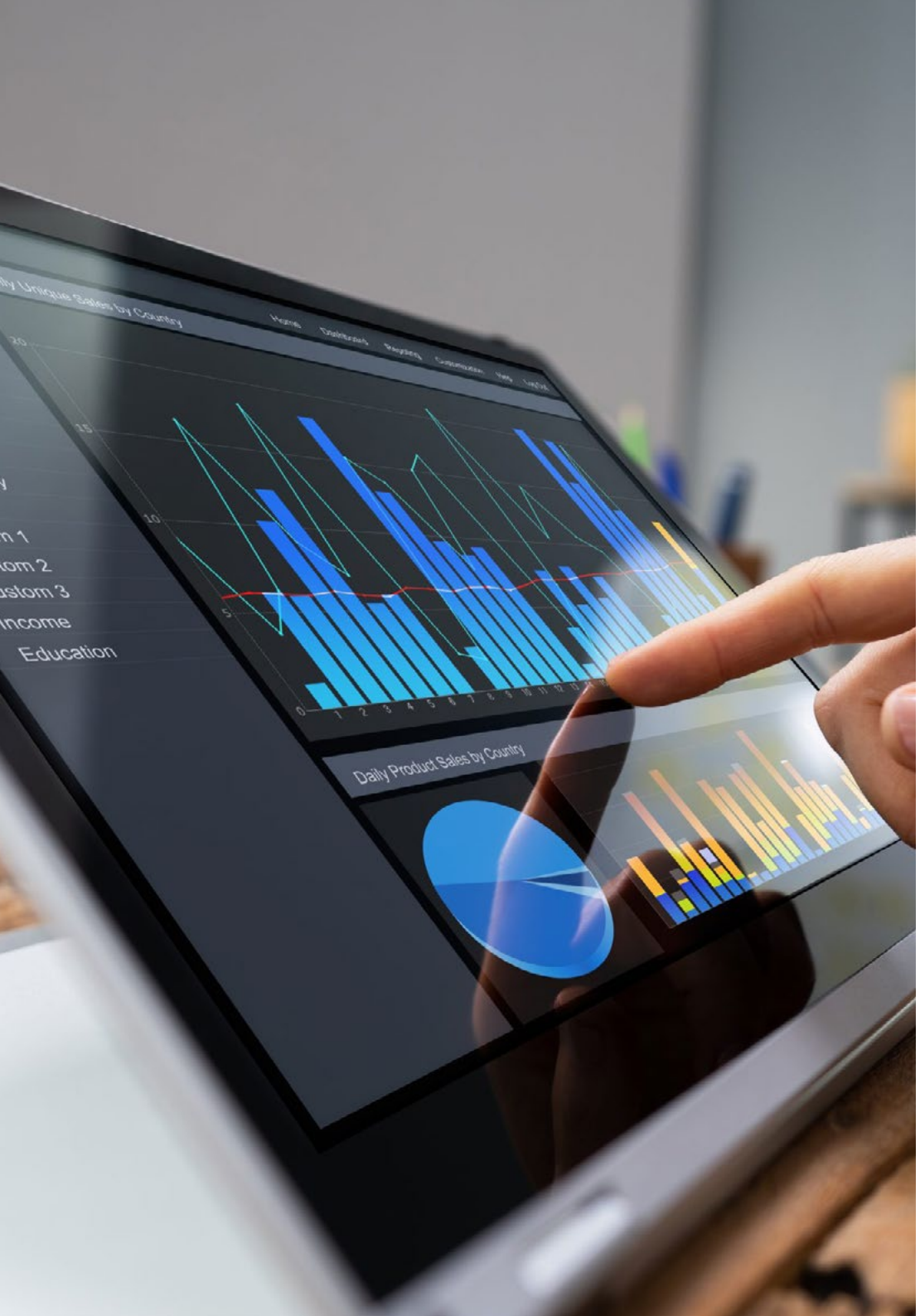
This Postgraduate Certificate has a select group of experts with multiple years of experience in data development and analysis. Together, they have created a program that will enhance the students' skills in a practical and educational way.

This group of experts will put their many years of experience at your disposal to enhance your education"

Management

Dr. Peralta Martín-Palomino, Arturo

- CEO and CTO at Prometeus Global Solutions
- CTO at Corporate Technologies in Corporate Technologies
- CTO in AI Shephers GmbH
- Doctorate in Psychology from the University of Castilla La
- PhD in Economics, Business and Finance from the Camilo José Cela University. Outstanding Award in her PhD
- PhD in Psychology, University of Castilla La Mancha
- 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
- Certificate 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 (European Business School of Barcelona)
- Master in Big Data and Business Intelligence (European Business School of Barcelona)

09

Impact on Your Career

This program involves a great economic, professional and, of course, personal investment, of which TECH is aware. The ultimate goal of carrying out this great effort should be to achieve professional growth in the students' field of interest.

Data management will be one of the levers that will help elevate your potential as a team manager"

If you want to make a positive change in your profession, the Postgraduate Certificate in Predictability and Analysis of Stochastic Phenomena in Data Science will help you achieve it.

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

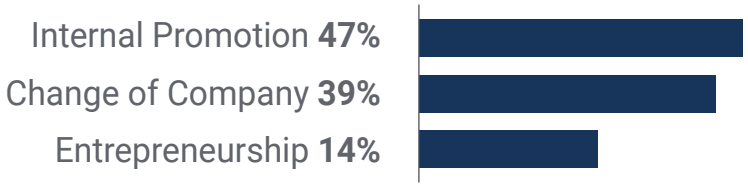
TECH's Postgraduate Certificate in Predictability and Analysis of Stochastic Phenomena in Data Science is an intensive program that prepares future graduates to face challenges and business decisions in the field of data analysis. The main objective is to promote personal and professional growth. Helping 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.

This program has the key to the students' professional success: up-to-date content and educational methodology.

When the change occurs

Type of change



Salary increase

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

10

Benefits for Your Company

The Postgraduate Certificate in Predictability and Analysis of Stochastic Phenomena in Data Science contributes to elevate the organization's talent to its maximum potential through the education of high-level leaders.

Participating in this program is a unique opportunity to access a powerful network of contacts in which to find future professional partners, customers or suppliers.

Manage a technology department by understanding data behavior to eliminate errors"

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.

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.

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

06

Increased competitiveness

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

11

Certificate

The Postgraduate Certificate in Predictability and Analysis of Stochastic Phenomena in Data Science guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Technological University.

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

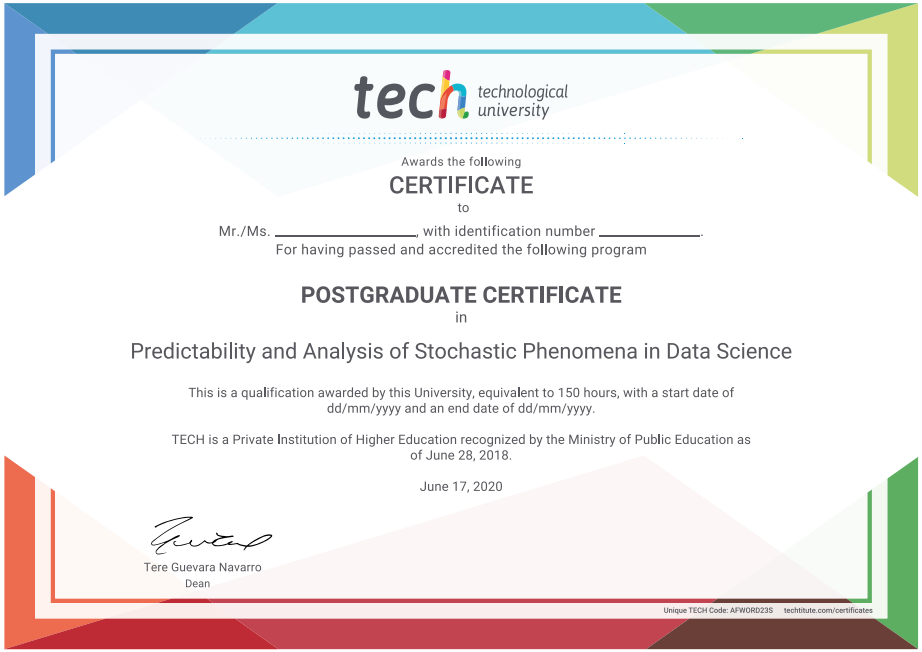
This **Postgraduate Certificate in Predictability and Analysis of Stochastic Phenomena in Data Science** contains the most complete and up-to-date program on the market.

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

The certificate issued by **TECH Technological University** will reflect the qualification obtained in the Postgraduate Certificate, and meets the requirements commonly demanded by labor exchanges, competitive examinations, and professional career evaluation committees

Title: **Postgraduate Certificate in Predictability and Analysis of Stochastic Phenomena in Data Science**

Official N° of Hours: **150 h.**


tech technological university

Awards the following

CERTIFICATE

to

Mr./Ms. _____, with identification number _____.

For having passed and accredited the following program

POSTGRADUATE CERTIFICATE

in

Predictability and Analysis of Stochastic Phenomena in Data Science

This is a qualification awarded by this University, equivalent to 150 hours, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH is a Private Institution of Higher Education recognized by the Ministry of Public Education as of June 28, 2018.

June 17, 2020

Tere Guevara Navarro
Dean

Unique TECH Code: AFWORD23S techtitute.com/certificates

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

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