Advanced Master's Degree

MBA in Data Science Management

tech technological university

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Advanced Master's Degree
MBA in Data Science Management

- Modality: **online**
- Duration: **2 years**
- Certificate: **TECH Technological University**
- Dedication: **16h/week**
- Schedule: **at your own pace**
- Exams: **online**

Website: www.techtitute.com/in/information-technology/advanced-master-degree/advanced-master-degree-mba-data-science-management

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01

Introduction

So much data is generated daily by companies in any field that, in the midst of the digital revolution, a new cross-cutting discipline known as data science has emerged. Experts in data science management must not only know all the complexities of information processing in order to turn it into a decisive advantage for their company, but they must also complement their skills with knowledge of programming and computer science so as to be capable of adapting digital systems and work methodologies to the data collection needs of modern companies. In view of this, TECH has developed the following program, in which experts in the analytical, computer and technological fields bring all their knowledge to turn students into multi-skilled professionals who are able to assume great responsibility in a multitude of environments.

With this MBA specialization in Data Science Management you will be the best possible candidate for the management of any team, bringing with you a unique analytical and technical point of view"

Companies which are up-to-date with the reality of the digital world we live in require multidisciplinary professionals. These teams are generally made up of highly qualified individuals who require an even more specialized level of management which has been adapted according to the level of their expertise. This MBA in Data Science Management covers this niche market, providing students with a unique and useful set of skills with which to lead teams. Using data science and deep analytics, the student will be able to make quick decisions from a global perspective with a comprehensive understanding of the reality that surrounds these complex and changing business environments.

The training material covers all aspects necessary to successfully lead, from an analytical perspective, the management, manipulation and interpretation of collected data; the optimal devices and platforms for data management; data mining, data graphing and data-driven predictive models; and finally, leadership and effective communication with large groups at the workplace. In addition to all of the above, there are other complementary, more technical skills that make this a wide-ranging and comprehensive course.

Moreover, the students will have the total freedom to take on this program at their own pace, since it is a 100% online qualification, without fixed schedules or the obligation to attend in person. The didactic material is accessible at all times and the student can adapt the learning experience to suit their personal and professional obligations.

This **MBA in Data Science Management** contains the most complete and up-to-date educational program on the market. The most important features include:

- The development of case studies presented by experts in leadership and data analytics
- The graphic, schematic, and eminently practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional practice
- Practical exercises where the self-assessment process can be carried out to improve learning
- Special emphasis on innovative methodologies in the field of data science
- Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection work
- Content that is accessible from any fixed or portable device with an Internet connection

With the skill set provided by this MBA in Data Science Management,you will have everything it takes to launch your career to new heights and achieve your goals”

Leaders with the greatest skills and knowledge are the ones who can make a difference in a contested and competitive business environment.Make a difference and succeed where others have failed with leadership and data science skills"

This is your moment to reach the zenith of your professional career. Specialize with this MBA in Data Science Management and apply for the jobs you've always dreamed of.

TECH offers you the possibility to study at your own pace. You have a unique opportunity to give your resume a unique touch of class and stand out from the rest of the competition.

The faculty includes professionals belonging to the field of business management and data science, who bring to this program their vast work experience, as well as recognized specialists from prestigious societies and universities of reference.

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

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

02

Objectives

The objective of this MBA in Data Science Management is to instruct students in a variety of technical skills, with special emphasis on the use of data for the management of teams in the workplace. Therefore, upon graduation, the student will be able to manage professionals of all levels of qualifications and know how to adapt their precise methodology and tools to the needs of the business and the company. This is a distinct opportunity for people who want to orient their professional career towards the leadership of multidisciplinary teams.

You will take the ultimate leap in your professional life with a unique and decisive training experience that will educate you as an expert in the use of data in the field of business"

General objectives

- Develop each stage of the data lifecycle
- Examine the data mining process
- Evaluate sessions and traffic to better understand the audience
- Analyze the regulatory framework for data protection and its relationship with the future regulation of artificial intelligence-based systems
- Analyze different data models and their impact on applications
- Analyze classical system models and identify shortcomings for use in distributed applications
- Analyze the benefits of applying data analytics techniques in each department of the company
- Propose techniques and objectives to be as productive as possible according to the department

Specific objectives

- Develop analytical skills to make quality decisions
- Examine effective marketing and communication campaigns
- Generate specialized knowledge to develop predictive analytics
- Propose business and loyalty plans based on market research
- Perform efficient data analysis for business interests
- Produce relevant, effective information for decision making
- Determine the best practices for data management according to its typology and uses
- Identify what is IoT (Internet of Things) and IIoT (Industrial Internet of Things)
- Examine the Industrial Internet Consortium
- Analyze what is the IoT reference architecture
- Identify communications protocols and technologies used in IoT
- Analyze the different software tools for graphing and exploratory data analysis
- Develop the skills to convert data into information from which knowledge can be extracted
- Determine the main characteristics of a dataset, its structure, components, and implications for their distribution in modeling
- Support decision making by performing comprehensive data analysis in advance
- Develop skills to solve practical cases using data science techniques
- Generate specialized knowledge about the statistical prerequisites for any data analysis and evaluation

- Develop the necessary skills for data identification, preparation and transformation
- Implement the different machine learning algorithms
- Determine the requirements for mass data usage systems
- Evaluate which widely used applications use the fundamentals of distributed systems to design their systems
- Analyze the way in which databases store and retrieve information
- Analyze the state of the art of Artificial Intelligence (AI) and data analytics
- Develop specialized knowledge of the most widely used technologies
- Generate a better understanding of the technology through use cases
- Generate specialized knowledge for commercial decision making
- Determine how to establish communication and information exchange between the company's departments and customers
- Generate specialized knowledge to perform data analysis
- Establish best practices for data management according to their typology and uses
- Analyze the metrics and validation methods of different machine learning algorithms
- Examine the evolution and development from its origin to the present day
- Examine the data protection regulation and related regulations
- Propose verification and testing techniques for distributed platforms

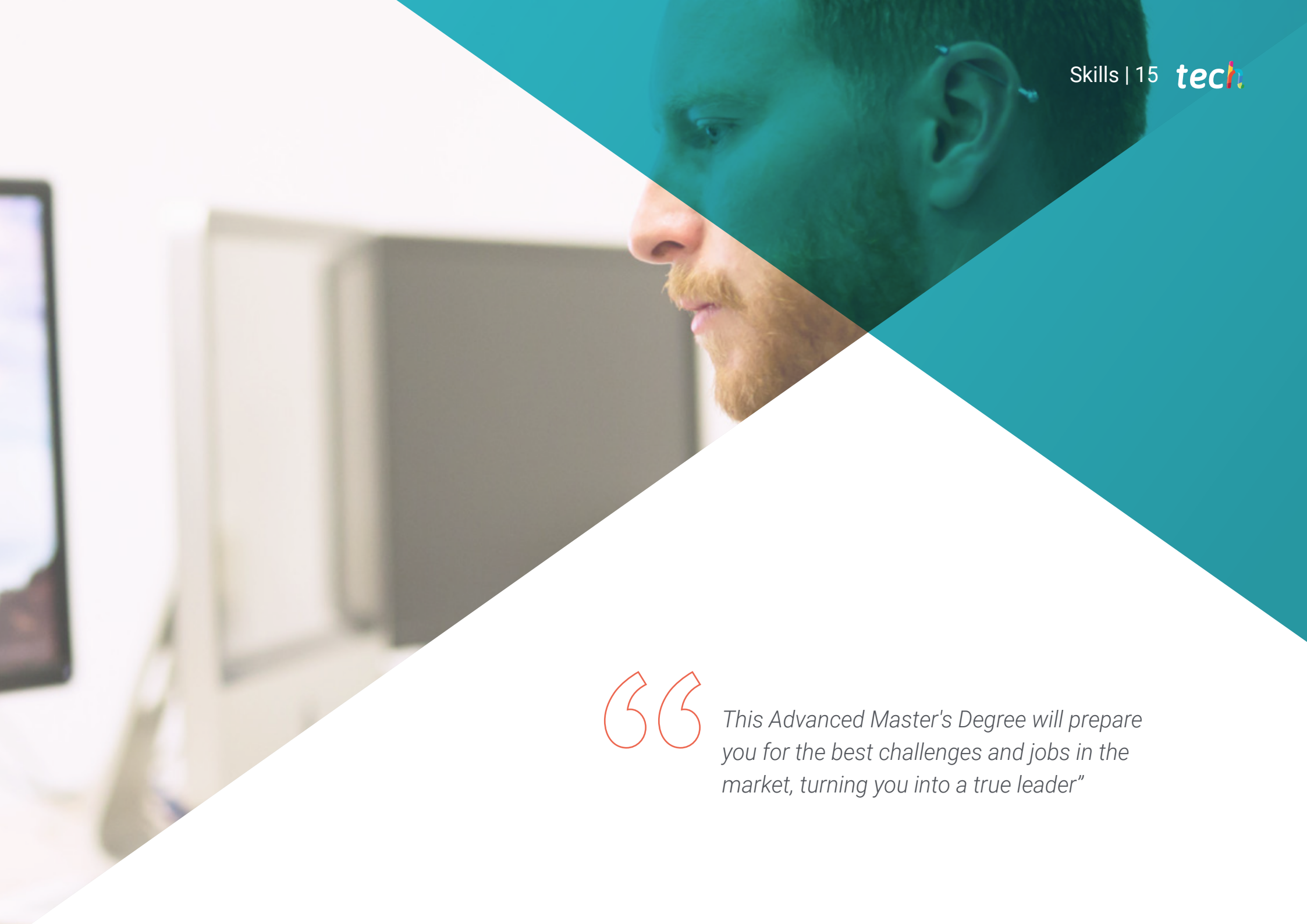
- Analyze the most used options in the implementation of Cloud platforms
- Analyze the different general practices in the Kanban method
- Examine metrics for performance measurement in Kanban
- Identify and analyze the differences between the three methodologies: PMI, Scrum and Kanban
- Propose a leadership model adapted to change
- Establish emotional intelligence as a basic management tool in the company
- Develop negotiation and conflict resolution strategies in the technology company

TECH's goal is to make its students the best professionals they can be. How about you? Are you ready to become the best version of yourself?"

03

Skills

The skills that a manager trained in data science require are many and varied, ranging from the management of teams of professionals to the more specialized issues such as the handling of the information which is generated. Therefore, students will be provided with a wealth of knowledge during this MBA in Data Science Management from TECH.



This Advanced Master's Degree will prepare you for the best challenges and jobs in the market, turning you into a true leader"

General skills

- Respond to current needs in the area of data analytics in the field of informatics in the IT field
- Develop a technical and business perspective of data analysis
- Understand the most current algorithms, platforms and tools for data exploration, visualization, manipulation, processing and analysis
- Implement a business vision necessary for valorization as a key element for decision making
- Be able to address problems specific to data analysis

Propose complete business plans, build customer loyalty with attractive products that meet their needs and effectively manage large teams thanks to this MBA in Data Science Management"

Specific skills

- Specialize in the most common information systems
- Know the main regulations relating to the management and protection of corporate data
- Manage specific architectures for high-volume information processing for business exploitation
- Make use of the main IoT technologies and their applicability in real environments
- Carry out web analytics processes to better understand the potential client, as a key tool for the management of strategic actions
- Manage projects and people more effectively
- Specialize in Data Science from a technical and business perspective
- Visualize data in the most appropriate way to facilitate sharing and understanding of different profiles
- Address the key functional areas of the organization where data science can deliver the most value
- Develop the data life cycle, its typology and the technologies and phases necessary for its management
- Process and manipulate data using specific languages and libraries
- Develop advanced knowledge of fundamental data mining techniques for data selection, preprocessing and transformation
- Specialize in the main machine learning algorithms for the extraction of hidden knowledge in data
- Generate specialized knowledge in the software architectures and systems required for intensive data use
- Determine how the IoT can be a source of data generation and key information on which to apply data science for knowledge extraction
- Analyze the different ways of applying data science in different industries or verticals by learning real-world examples

04

Course Management

TECH has developed the following MBA in Data Science Management with the collaboration of the best possible team of professionals.Experts from different branches of business management, data analysis, IT and development have joined forces to develop an essential, up-to-date and market-driven syllabus. All this makes it possible for students to have the certainty of acquiring the best possible skill set from the best professionals.

Assert your professionalism and make your professional profile stand out from the crowd with the knowledge of real experts from a diverse range of management sectors"

Management

Dr. Peralta Martín-Palomino, Arturo

- CEO and CTO at Prometeus Global Solutions
- CTO in AI Shephers GmbH
- CTO in Corporate Technologies
- Director of Design and Development at DocPath Document Solutions
- Computer Engineering from the University of Castilla La Mancha
- Doctorate in Psychology from the University of Castilla La Mancha
- PhD in Economics, Business and Finance from the Camilo José Cela University
- Master's Degree in Advanced Information Technologies from the University of Castilla la Mancha
- Master MBA+E (Master's Degree in Business Administration and Organizational Engineering) from the University of Castilla la Mancha

Professors

Dr. Armero Fernández, Rafael

- Business Intelligence Consultant at SDG Group
- Digital Engineer at Mi-GSO
- Logistics Engineer at Torrecid S.A.
- Quality Intern - INDRA
- Degree in Biomedical Engineering from the Polytechnic University of Valencia
- Master's Degree in 4.0 from the University of Alcalá de Henares

Mr. Peris Morillo, Luis Javier

- Technical Director at Capitole Consulting
- Senior Technical Manager and Delivery Execution Support at HCL
- Agile Coach and Director of Operations at Mirai Advisory
- Developer, team leader, Scrum Master, Agile coach and product manager at DocPath
- Higher Engineering in Computer Science from the ESI of Ciudad Real (UCLM)
- Postgraduate in Project Management by CEOE - (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.

Mr. Montoro Montarroso, Andrés

- Researcher in the SMILe Group at the University of Castilla La Mancha
- Data Scientist at Prometeus Global Solutions
- Degree in Computer Engineering from the University of Castilla La Mancha. Speciality in Computer Science
- Master's Degree in Data Science and Computer Engineering from the University of Granada

Mrs. Fernández Meléndez, Galina

- Data Analyst at Aresi and ADN Mobile Solutions
- Vice President of Credit at Banco Bicentenario
- Agricultural Credit Manager at Banco Agrícola de Venezuela
- Bachelor's Degree in Business Administration at the University of Bicentenaria Aragua- Caracas
- Diploma in Planning and Public Finance from the Venezuelan School of Planning - School of Finance
- Master's Degree in Data Analysis and Business Intelligence from the University of Oviedo
- MBA from the European Business School of Barcelona
- Master's Degree in Big Data and Business Intelligence from the European Business School of Barcelona

Mrs. Pedrajas Perabá, María Elena

- Business Analyst at Management Solutions in Madrid
- 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

Mrs. Martínez Cerrato, Yésica

- Project Manager in the Key Accounts Integration area at the Spanish Post Office (Correos y Telégrafos)
- Computer Technician - Responsible for OTEC computer classrooms at the University of Alcalá
- Electronic Security Product Technician at Securitas Security Spain
- Head of Digital Transformation and Business Intelligence Analyst at Ricopia Technologies
- Teacher of computer classes at the ASALUMA Association
- Degree in Electronic Communications Engineering at the University of Alcalá, Spain

Mr.Fondón Alcalde, Rubén

- Customer Value Management Business Analyst at Vodafone Spain
- Head of Service Integration at Entelgy for Telefónica Global Solutions
- Online account manager of clone servers at EDM Electronics
- Business Analyst for Southern Europe at Vodafone Global Enterprise
- Telecommunications Engineer at Madrid's European University
- Master's Degree in Big Data and Analytics from the International University of Valencia

Mr. Díaz Díaz-Chirón, Tobías

- Researcher at the ArCO laboratory of the University of Castilla La Mancha, a group dedicated to projects related to computer architectures and networks
- Consultant at Blue Telecom, a company dedicated to the telecommunications sector
- Degree in Computer Engineering from the Castilla La Mancha University

Mr. Tato Sánchez, Rafael

- Project Management and Technical Director at Indra Sistemas
- Head of the Traffic Control and Management Center of the Directorate General of Traffic in Madrid
- Systems Engineer at ENA Tráfico
- Degree in Industrial Electronics and Automation Engineering at European University of Madrid
- Industrial Technical Engineer in Electricity from Polytechnic University of Madrid
- Master's Degree in Industry 4.0 from the International University of La Rioja

Mr. García Niño, Pedro

- Sales Manager for IT services at Camuñase and Electrocamuñas
- Hardware/software technician at Camuñase and Electrocamuñas
- Specialist in PPC and SEM Aula CM
- Specialist in Digital Marketing and RRSS
- SEO On-Page / Internal Factors Specialist
- Specialist in digital marketing analytics and performance measurement / Google Analytics

Mrs. García La O, Marta

- Management, administration and account management at Think Planning and Development
- Organization, supervision and mentoring of senior management training courses in Think Planning and Development
- Accountant-administrative in Tabacos Santiago and Zaraiche-Stan Roller
- Marketing Specialist at Versas Consultores
- Diploma in Business Studies from the University of Murcia
- Master's Degree in Sales and Marketing Management from Fundesem Business School

Mrs. Palomino Dávila, Cristina

- Consultant and Senior GRC Auditor at Oesía Networks
- Audit Sub-Directorate - General Secretariat in Hidrocarburos Logistics Company CLH
- Senior consultant and auditor in the field of Personal Data Protection and information society services at Helas Consultores
- Graduate in Law from the University of Castilla La Mancha
- Master's Degree in Legal Consultancy for Businesses from the Instituto de Empresa
- Advanced Course in Digital Security and Crisis Management from the University of Alcalá and the Spanish Security and Crisis Alliance(AESYC)

05

Structure and Content

The MBA in Data Science Management is composed of 19 modules made up of a variety of different topics and subtopics, all the information is compiled in a precise and clear way so that the students will not have any difficulties when it comes to carrying out their studies. During the course, the students will learn innovative work methodologies, different forms of data management and storage, as well as how to solve and mediate any possible conflicts that may arise in the workplace, alongside additional key information that will also prove useful to their professional career in management.

This MBA in Data Science Management gives you the opportunity to acquire the best knowledge in the most concise and precise way possible"

Module 1. Data Analytics in the Business Organization

1.1. Business Analysis
- 1.1.1. Business Analysis
- 1.1.2. Data Structure
- 1.1.3. Phases and Elements

1.2. Data Analytics in the Company
- 1.2.1. Scorecards and KPIs by Departments
- 1.2.2. Operational, Tactical and Strategic Reporting
- 1.2.3. Data Analytics Applied to Each Department
  - 1.2.3.1. Marketing and Communication
  - 1.2.3.2. Commercial
  - 1.2.3.3. Customer Service
  - 1.2.3.4. Purchasing
  - 1.2.3.5. Administration
  - 1.2.3.6. Human Resources
  - 1.2.3.7. Production
  - 1.2.3.8. IT

1.3. Marketing and Communication
- 1.3.1. KPIs to be Measured, Applications and Benefits
- 1.3.2. Marketing Systems and Data Warehouse
- 1.3.3. Implementation of a Data Analytics Marketing Framework
- 1.3.4. Marketing and Communication Plan
- 1.3.5. Strategies, Forecasting and Campaign Management

1.4. Commerce and Sales
- 1.4.1. Contributions of Data Analytics in the Commercial Area
- 1.4.2. Sales Department Needs
- 1.4.3. Market Research

1.5. Customer Service
- 1.5.1. Loyalty
- 1.5.2. Personal Coaching and Emotional Intelligence
- 1.5.3. Customer Satisfaction

1.6. Purchasing
- 1.6.1. Data Analytics for Market Research
- 1.6.2. Data Analytics for Competitive Studies
- 1.6.3. Other Applications

1.7. Administration
- 1.7.1. Needs in the Administration Department
- 1.7.2. Data Warehouse and Financial Risk Analysis
- 1.7.3. Data Warehouse and President of Credit Risk Analysis

1.8. Human Resources
- 1.8.1. Human Resources and Benefits of Data Analytics
- 1.8.2. Data Analytics Tools in the PR Department
- 1.8.3. Data Analytics Application in the PR Department

1.9. Production
- 1.9.1. Data Analysis in a Production Department
- 1.9.2. Applications
- 1.9.3. Benefits

1.10. IT
- 1.10.1. IT Department
- 1.10.2. Data Analytics and Digital Transformation
- 1.10.3. Innovation and Productivity

Module 2. Data Management, Data Manipulation and Data Science Reporting

2.1. Statistics: Variables, Indexes and Ratios
- 2.1.1. Statistics
- 2.1.2. Statistical Dimensions
- 2.1.3. Variables, Indexes and Ratios

2.2. Data Typology
- 2.2.1. Qualitative
- 2.2.2. Quantitative
- 2.2.3. Characterization and Categories

2.3. Knowledge of Data Places from Measurement
- 2.3.1. Centralization Measures
- 2.3.2. Measures of Dispersion
- 2.3.3. Correlation

2.4. Knowledge of Data Places from Graph
- 2.4.1. Display According to Data Type
- 2.4.2. Interpretation of Graphic Information
- 2.4.3. Customization of Graphics with R

2.5. Probability
- 2.5.1. Probability
- 2.5.2. Probability Function
- 2.5.3. Distribution

2.6. Data Collection
- 2.6.1. Methodology of Data Collection
- 2.6.2. Data Collection Tools
- 2.6.3. Data Collection Channels

2.7. Data Cleaning
- 2.7.1. Phases of Data Cleansing
- 2.7.2. Data Quality
- 2.7.3. Data Manipulation (with R)

2.8. Data Analysis, Interpretation and Evaluation of Results
- 2.8.1. Statistical Measures
- 2.8.2. Relationship Indices
- 2.8.3. Data Mining

2.9. Data Warehouse
- 2.9.1. Components
- 2.9.2. Design

2.10. Data Availability
- 2.10.1. Access
- 2.10.2. Uses
- 2.10.3. Security/Safety

Module 3. IoT Devices and Platforms as a Foundation for Data Science

3.1. Internet of Things
- 3.1.1. Internet of the Future, Internet of Things
- 3.1.2. The Industrial Internet Consortium

3.2. Architecture of Reference
- 3.2.1. The Architecture of Reference
- 3.2.2. Layers
- 3.2.3. Components

3.3. Sensors and IoT Devices
- 3.3.1. Main Components
- 3.3.2. Sensors and Actuators

3.4. Communications and Protocols
- 3.4.1. Protocols. OSI Model
- 3.4.2. Communication Technologies

3.5. Cloud Platforms for IoT and IIoT
- 3.5.1. General Purpose Platforms
- 3.5.2. Industrial Platforms
- 3.5.3. Open Code Platforms

3.6. Data Management on IoT Platforms
- 3.6.1. Data Management Mechanisms. Open Data
- 3.6.2. Data Exchange and Visualization

3.7. IoT Security
- 3.7.1. Requirements and Safety Areas
- 3.7.2. IIoT Security Strategies

3.8. IoT Applications
- 3.8.1. Intelligent Cities
- 3.8.2. Health and Fitness
- 3.8.3. Smart Home
- 3.8.4. Other Applications

3.9. IIoT Applications
- 3.9.1. Fabrication
- 3.9.2. Transport
- 3.9.3. Energy
- 3.9.4. Agriculture and Livestock
- 3.9.5. Other Sectors

3.10. Industry 4.0
- 3.10.1. IoRT (Internet of Robotics Things)
- 3.10.2. 3D Additive Manufacturing
- 3.10.3. Big Data Analytics

Module 4. Graphical Representation for Data Analysis

4.1. Exploratory Analysis
- 4.1.1. Representation for Information Analysis
- 4.1.2. The Value of Graphical Representation
- 4.1.3. New Paradigms of Graphical Representation

4.2. Optimization for Data Science
- 4.2.1. Color Range and Design
- 4.2.2. Gestalt in Graphic Representation
- 4.2.3. Mistakes to Avoid and Tips

4.3. Sources of Basic Data
- 4.3.1. For Quality Representation
- 4.3.2. For Amount Representation
- 4.3.3. For Time Representation

4.4. Sources of Complexity Data
- 4.4.1. Files, Listings and Data Bases
- 4.4.2. Open Data
- 4.4.3. Continuous Generation Data

4.5. Types of Graphs
- 4.5.1. Basic Representations
- 4.5.2. Block Representation
- 4.5.3. Presentation for Dispersion Analysis
- 4.5.4. Circular Representations
- 4.5.5. Bubble Representations
- 4.5.6. Geographical Representations

4.6. Types of Display
- 4.6.1. Comparative and Relational
- 4.6.2. Distribution
- 4.6.3. Hierarchical

4.7. Report Design with Graphical Representation
- 4.7.1. Application of Graphs in Marketing Reports
- 4.7.2. Application of Graphs in Scorecards and KPIs
- 4.7.3. Application of Graphics in Strategic Plans
- 4.7.4. Other Uses: Science, Health, Business

4.8. Graphic Narration
- 4.8.1. Graphic Narration
- 4.8.2. Evolution
- 4.8.3. Uses

4.9. Visualization-Oriented Tools
- 4.9.1. Advanced Tools
- 4.9.2. Online Software
- 4.9.3. Open Source

4.10. New Technologies in Data Visualization
- 4.10.1. Systems for Virtualization of Reality
- 4.10.2. Reality Enhancement and Augmentation Systems
- 4.10.3. Intelligent Systems

Module 5. Data Science Tools

5.1. Data Science
- 5.1.1. Data Vizualization
- 5.1.2. Advanced Tools for the Data Scientist

5.2. Data, Information and Knowledge
- 5.2.1. Data, Information and Knowledge
- 5.2.2. Types of Data
- 5.2.3. Sources of Data

5.3. From Data to Information
- 5.3.1. Data Analysis
- 5.3.2. Types of Analysis
- 5.3.3. Extraction of Information from a Dataset

5.4. Extraction of Information by Visualization
- 5.4.1. Visualization as an Analysis Tool
- 5.4.2. Visualization Methods
- 5.4.3. Visualization of a Data Set

5.5. Quality of Data
- 5.5.1. Quality Data
- 5.5.2. Data Cleansing
- 5.5.3. Data Pre-Basic Processing

5.6. Dataset
- 5.6.1. Dataset Enrichment
- 5.6.2. The Curse of Dimensionality
- 5.6.3. Modification of a Data Set

5.7. Imbalance
- 5.7.1. Class Imbalance
- 5.7.2. Imbalance Mitigation Techniques
- 5.7.3. Balancing a Dataset

5.8. Unsupervised Models
- 5.8.1. Unsupervised Models
- 5.8.2. Methods
- 5.8.3. Classification with Unsupervised Models

5.9. Supervised Models
- 5.9.1. Supervised Models
- 5.9.2. Methods
- 5.9.3. Classification with Unsupervised Models

5.10. Tools and Best Practices
- 5.10.1. Good Practices for the Data Scientist
- 5.10.2. The Best Model
- 5.10.3. Useful Tools

Module 6. Data Mining Selection, Pre-Processing and Transformation

6.1. Statistical Inference
- 6.1.1. Descriptive Statistics vs. Statistical Inference
- 6.1.2. Parametric Procedures
- 6.1.3. Non-Parametric Procedures

6.2. Exploratory Analysis
- 6.2.1. Descriptive Analysis
- 6.2.2. Visualization
- 6.2.3. Data Preparation

6.3. Data Preparation
- 6.3.1. Data Integration and Data Cleansing
- 6.3.2. Data Normalization
- 6.3.3. Transforming Attributes

6.4. Lost Values
- 6.4.1. Treatment of Missing Values
- 6.4.2. Maximum Likelihood Imputation Methods
- 6.4.3. Missing Value Imputation Using Machine Learning

6.5. Noise in the Data
- 6.5.1. Noise Classes and Attributes
- 6.5.2. Noise Filtering
- 6.5.3. The Effect of Noise

6.6. The Curse of Dimensionality
- 6.6.1. Oversampling
- 6.6.2. Undersampling
- 6.6.3. Multidimensional Data Reduction

6.7. From Continuous to Discrete Attributes
- 6.7.1. Continuous Data vs. Discreet Data
- 6.7.2. Discretization Process

6.8. The Data
- 6.8.1. Data Selection
- 6.8.2. Prospects and Selection Criteria
- 6.8.3. Selection Methods

6.9. Instance Selection
- 6.9.1. Methods for Instance Selection
- 6.9.2. Prototype Selection
- 6.9.3. Advanced Methods for Instance Selection

6.10. Data Pre-Processing in Big Data Environments
- 6.10.1. Big Data
- 6.10.2. Classical vs. Massive Pre-Processing
- 6.10.3. Smart Data

Module 7. Predictability and Analysis of Stochastic Phenomena

7.1. Time Series
- 7.1.1. Time Series
- 7.1.2. Utility and Applicability
- 7.1.3. Related Case Studies

7.2. The Time Series
- 7.2.1. ST Seasonality Trend
- 7.2.2. Typical Variations
- 7.2.3. Residue Analysis

7.3. Typology
- 7.3.1. Stationary
- 7.3.2. Non-Stationary
- 7.3.3. Transformations and Adjustments

7.4. Schemes for Time Series
- 7.4.1. Additive Scheme (Model)
- 7.4.2. Multiplied Scheme (Model)
- 7.4.3. Procedures for Determining the Type of Model

7.5. Basic Forecasting Methods
- 7.5.1. Stockings
- 7.5.2. Naïve
- 7.5.3. Seasonal Naivety
- 7.5.4. Comparison of Methods

7.6. Residue Analysis
- 7.6.1. Autocorrelation
- 7.6.2. Waste ACF
- 7.6.3. Correlation Test

7.7. Regression in the Context of Time Series
- 7.7.1. ANOVA
- 7.7.2. Fundamentals
- 7.7.3. Practical Applications

7.8. Predictive Time Series Models
- 7.8.1. ARIMA
- 7.8.2. Exponential Smoothing

7.9. Manipulation and Analysis of Time Series with R
- 7.9.1. Data Preparation
- 7.9.2. Pattern Identification
- 7.9.3. Model Analysis
- 7.9.4. Prediction

7.10. Combined Graphical Analysis with R
- 7.10.1. Typical Situations
- 7.10.2. Practical Application for Simple Problem Solving
- 7.10.3. Practical Application for Advanced Problem Solving

Module 8. Design and Development of Intelligent Systems

8.1. Data Pre-Processing
- 8.1.1. Data Pre-Processing
- 8.1.2. Data Transformation
- 8.1.3. Data Mining

8.2. Automatic Learning
- 8.2.1. Supervised and Unsupervised Learning
- 8.2.2. Reinforcement Learning
- 8.2.3. Other Learning paradigms

8.3. Classification Algorithms
- 8.3.1. A Utomatic Learning
- 8.3.2. SVM & KNN
- 8.3.3. Metrics and Scores for Ranking

8.4. Regression Algorithms
- 8.4.1. Linear Regression, Logistic Regression and Nonlinear Models
- 8.4.2. The Time Series
- 8.4.3. Metrics and Scores for Regression

8.5. Clustering Algorithms
- 8.5.1. Hierarchical Grouping Techniques
- 8.5.2. Hierarchical Grouping Techniques
- 8.5.3. Metrics and Scores for Clustering

8.6. Association Rules Techniques
- 8.6.1. Methods for Rules Extraction
- 8.6.2. Metrics and Scores for Association Rule Algorithms

8.7. Advanced Classification Techniques. Multiclassifiers
- 8.7.1. Bagging Algorithms
- 8.7.2. Random Forests Sorter
- 8.7.3. Boosting for Decision Trees

8.8. Probabilistic Graphical Models
- 8.8.1. Probability Models
- 8.8.2. Bayesian Networks Properties, Representation and Parameterization
- 8.8.3. Other Probabilistic Graphical Models

8.9. Neural Networks
- 8.9.1. Machine Learning with Neural Networks Artificial
- 8.9.2. Feedforward Networks

8.10. Deep Learning
- 8.10.1. Deep Feedforward Networks
- 8.10.2. Convolutional Neural Networks and Sequence Models
- 8.10.3. Tools for Implementing Deep Neural Networks

Module 9. Tools for Implementing Deep Neural Networks

9.1. Non-Functional Requirements. Pillars of Big Data Applications
- 9.1.1. Reliability
- 9.1.2. Adaptability
- 9.1.3. Maintainability

9.2. Data Models
- 9.2.1. Relational Model
- 9.2.2. Documentary Model
- 9.2.3. Network Data Model

9.3. Databases Data Storage and Retrieval Engines
- 9.3.1. Hash Indexes
- 9.3.2. Structured Log Storage
- 9.3.3. Trees B

9.4. Data Encoding Formats
- 9.4.1. Language-Specific Formats
- 9.4.2. Standardized Formats
- 9.4.3. Binary Encoding Formats
- 9.4.4. Data Flow between Processes

9.5. Replication
- 9.5.1. Replication Objectives
- 9.5.2. Replication Models
- 9.5.3. Problems with Replication

9.6. Distributed Transactions
- 9.6.1. Transaction
- 9.6.2. Protocols for Distributed Transactions
- 9.6.3. Serializable Transactions

9.7. Partitions
- 9.7.1. Forms of Partitioning
- 9.7.2. Secondary Index Interaction and Partitioning
- 9.7.3. Partition Rebalancing

9.8. Offline Data Processing
- 9.8.1. Batch Processing
- 9.8.2. Distributed File Systems
- 9.8.3. MapReduce

9.9. Real-Time Data Processing
- 9.9.1. Types of Message Brokers
- 9.9.2. Representation of Databases as Data Flows
- 9.9.3. Data Stream Processing

9.10. Practical Applications in the Company
- 9.10.1. Consistency in Readings
- 9.10.2. Holistic Approach to Data
- 9.10.3. Scaling of a Distributed Service

Module 10. Practical Application of Data Science in Sectors of Business Activity

10.1. Health Sector
- 10.1.1. Implications of AI and Data Analytics in the Healthcare Sector
- 10.1.2. Opportunities and Challenges

10.2. Risks and Trends in the Healthcare Sector
- 10.2.1. Use in the Healthcare Sector
- 10.2.2. Potential Risks Related to the Use of AI

10.3. Financial Services
- 10.3.1. Implications of AI and Data Analytics in the Financial Services Industry
- 10.3.2. Use in Financial Services
- 10.3.3. Potential Risks Related to the Use of AI

10.4. Retail
- 10.4.1. Implications of AI and Data Analytics in the Retail Sector
- 10.4.2. Use in Retail
- 10.4.3. Potential Risks Related to the Use of AI

10.5. Industry 4.0
- 10.5.1. Implications of AI and Data Analytics in 4.0 Industry
- 10.5.2. Use in 4.0 Industry

10.6. Risks and Trends in 4.0 Industry
- 10.6.1. Potential Risks Related to the Use of AI

10.7. Public Administration
- 10.7.1. Implications of AI and Data Analytics in Public Administration
- 10.7.2. Use in Public Administration
- 10.7.3. Potential Risks Related to the Use of AI

10.8. Educational
- 10.8.1. Implications of AI and Data Analytics in Educational
- 10.8.2. Potential Risks Related to the Use of AI

10.9. Forestry and Agriculture
- 10.9.1. Implications of AI and Data Analytics in Forestry and Agriculture
- 10.9.2. Use in Forestry and Agriculture
- 10.9.3. Potential Risks Related to the Use of AI

10.10. Human Resources
- 10.10.1. Implications of AI and Data Analytics in Human Resource Management
- 10.10.2. Practical Applications in the Business World
- 10.10.3. Potential Risks Related to the Use of AI

Module 11. Main Information Management Systems

11.1. ERP and CRM
- 11.1.1. ERP
- 11.1.2. CRM
- 11.1.3. Differences between ERP and CRM Selling Point
- 11.1.4. Business Success

11.2. ERP
- 11.2.1. ERP
- 11.2.2. Types of ERP
- 11.2.3. Development of an ERP Implementation Project
- 11.2.4. ERP Resource Optimizer
- 11.2.5. Architecture of an ERP System

11.3. Information Provided by the ERP
- 11.3.1. Information Provided by the ERP
- 11.3.2. Advantages and Disadvantages
- 11.3.3. The Information

11.4. ERP Systems
- 11.4.1. Current ERP Systems and Tools
- 11.4.2. Decision-Making
- 11.4.3. Day-to-Day with ERP

11.5. CRM: The Implementation Project
- 11.5.1. The CRM The Implementation Project
- 11.5.2. The CRM as a Commercial Tool
- 11.5.3. Strategies for the Information System

11.6. CRM: Customer Loyalty
- 11.6.1. Starting Point
- 11.6.2. Sell or Loyalty
- 11.6.3. Factors for Success in our Loyalty System
- 11.6.4. Multi-Channel Strategies
- 11.6.5. Design of Loyalty Actions
- 11.6.6. E-Loyalty

11.7. CRM: Communication Campaigns
- 11.7.1. Communication Actions and Plans
- 11.7.2. Importance of the Informed Customer
- 11.7.3. Listening to the Client

11.8. CRM: Preventing Dissatisfaction
- 11.8.1. Customer Cancellations
- 11.8.2. Detecting Errors in Time
- 11.8.3. Improvement Processes
- 11.8.4. Recovery of the Dissatisfied Customer

11.9. CRM: Special Communication Actions
- 11.9.1. Objectives and Planning of a Company Event
- 11.9.2. Design and Realization of the Event
- 11.9.3. Actions from the Department
- 11.9.4. Analysis of Results

11.10. Relational Marketing
- 11.10.1. Implantation. Errors
- 11.10.2. Methodology, Segmentation and Processes
- 11.10.3. Performance, According to the Department
- 11.10.4. CRM Tools

Module 12. Data Types and Data Life Cycle

12.1. Statistics
- 12.1.1. Statistics: Descriptive Statistics, Statistical Inferences
- 12.1.2. Population, Sample, Individual
- 12.1.3. Variables: Definition, Measurement Scales

12.2. Types of Data Statistics
- 12.2.1. According to Type
  - 12.2.1.1. Quantitative: Continuous Data and Discrete Data
  - 12.2.1.2. Qualitative: Binomial Data, Nominal Data and Ordinal Data
- 12.2.2. According to their Shape
  - 12.2.2.1. Numeric
  - 12.2.2.2. Text
  - 12.2.2.3. Logical
- 12.2.3. According to its Source
  - 12.2.3.1. Primary
  - 12.2.3.2. Secondary

12.3. Life Cycle of Data
- 12.3.1. Stages of the Cycle
- 12.3.2. Milestones of the Cycle
- 12.3.3. FAIR Principles

12.4. Initial Stages of the Cycle
- 12.4.1. Definition of Goals
- 12.4.2. Determination of Resource Requirements
- 12.4.3. Gantt Chart
- 12.4.4. Data Structure

12.5. Data Collection
- 12.5.1. Methodology of Data Collection
- 12.5.2. Data Collection Tools
- 12.5.3. Data Collection Channels

12.6. Data Cleaning
- 12.6.1. Phases of Data Cleansing
- 12.6.2. Data Quality
- 12.6.3. Data Manipulation (with R)

12.7. Data Analysis, Interpretation and Evaluation of Results
- 12.7.1. Statistical Measures
- 12.7.2. Relationship Indices
- 12.7.3. Data Mining

12.8. Data Warehouse
- 12.8.1. Elements that Comprise It
- 12.8.2. Design
- 12.8.3. Aspects to Consider

12.9. Data Availability
- 12.9.1. Access
- 12.9.2. Uses
- 12.9.3. Security/Safety

12.10. Regulatory Aspects
- 12.10.1. Data Protection Law
- 12.10.2. Good Practices
- 12.10.3. Other Normative Aspects

Module 13. Number - Machine Learning

13.1. Knowledge in Databases
- 13.1.1. Data Pre-Processing
- 13.1.2. Analysis
- 13.1.3. Interpretation and Evaluation of the Results

13.2. Machine Learning
- 13.2.1. Supervised and Unsupervised Learning
- 13.2.2. Reinforcement Learning
- 13.2.3. Semi-Supervised Learning. Other Learning Models

13.3. Classification
- 13.3.1. Decision Trees and Rule-Based Learning
- 13.3.2. Support Vector Machines (SVM) and K-Nearest Neighbour (KNN) Algorithms
- 13.3.3. Metrics for Sorting Algorithms

13.4. Regression
- 13.4.1. Linear and Logistic Regression
- 13.4.2. Non-Linear Regression Models
- 13.4.3. Time Series Analysis
- 13.4.4. Metrics for Regression Algorithms

13.5. Clustering
- 13.5.1. Hierarchical Grouping
- 13.5.2. Partitional Grouping
- 13.5.3. Metrics for Clustering Algorithms

13.6. Association Rules
- 13.6.1. Measures of Interest
- 13.6.2. Rule Extraction Methods
- 13.6.3. Metrics for Association Rule Algorithms

13.7. Multiclassifiers
- 13.7.1. Bootstrap Aggregation or Bagging
- 13.7.2. "Random Forests" Algorithm
- 13.7.3. "Boosting" Algorithm

13.8. Probabilistic Reasoning Models
- 13.8.1. Probabilistic Reasoning
- 13.8.2. Bayesian Networks or Belief Networks
- 13.8.3. Hidden Markov Models

13.9. Multilayer Perceptron
- 13.9.1. Neural Network
- 13.9.2. Machine Learning with Neural Networks
- 13.9.3. Gradient Descent, Backpropagation and Activation Functions
- 13.9.4. Implementation of an Artificial Neural Network

13.10. Deep Learning
- 13.10.1. Deep Neural Networks. Introduction
- 13.10.2. Convolutional Networks
- 13.10.3. Sequence Modelling
- 13.10.4. TensorFlow and Pytorch

Module 14. Web Analytics

14.1. Web Analytics
- 14.1.1. Introduction
- 14.1.2. Evolution of Web Analytics
- 14.1.3. Process of Analysis

14.2. Google Analytics
- 14.2.1. Google Analytics
- 14.2.2. Use
- 14.2.3. Objectives

14.3. Hits. Interactions with the Website
- 14.3.1. Basic Metrics
- 14.3.2. KPI (Key Performance Indicators)
- 14.3.3. Adequate Conversion Rates

14.4. Frequent Dimensions
- 14.4.1. Source
- 14.4.2. Medium
- 14.4.3. Keyword
- 14.4.4. Campaign
- 14.4.5. Personalized Labelling

14.5. Setting up Google Analytics
- 14.5.1. Installation. Creating the Account
- 14.5.2. Versions of the Tool: UA/GA4
- 14.5.3. Tracking Label
- 14.5.4. Conversion Objectives

14.6. Organization of Google Analytics
- 14.6.1. Account
- 14.6.2. Property
- 14.6.3. View

14.7. Google Analytics Reports
- 14.7.1. In Real Time
- 14.7.2. Audience
- 14.7.3. Acquisition
- 14.7.4. Behaviour

14.7.5. Conversions
14.7.6. e-Commerce
14.8. Google Analytics Advanced Reports
14.8.1. Personalized Reports
14.8.2. Panels
14.8.3. APIs
14.9. Filters and Segments
14.9.1. Filter
14.9.2. Segment
14.9.3. Types of Segments: Predefined / Customized
14.9.4. Remarketing Lists
14.10. Digital Analytics Plan
14.10.1. Measurement
14.10.2. Implementation in the Technological Environment
14.10.3. Conclusions

Module 15. Data Management Regulations

15.1. Regulatory Framework
15.1.1. Normative Framework and Definitions
15.1.2. Controllers, Joint Controllers and Processors
15.1.3. Forthcoming Regulatory Framework for Artificial Intelligence
15.2. Principles Relating to the Processing of Personal Data
15.2.1. Lawfulness, Fairness and Transparency and Purpose Limitation
15.2.2. Data Minimization, Accuracy and Limitation of Retention Period
15.2.3. Integrity and Confidentiality
15.2.4. Proactive Responsibility
15.3. Legitimation and Authorization for Processing
15.3.1. Basis of Legitimacy
15.3.2. Authorizations for the Processing of Special Categories of Data
15.3.3. Data Communications
15.4. Individuals Rights
15.4.1. Transparency and Information
15.4.2. Access
15.4.3. Rectification and Deletion (Right to be Forgotten), Limitation and Portability
15.4.4. Opposition and Automated Individual Decisions
15.4.5. Limits to Rights
15.5. Risk Analysis and Management
15.5.1. Identification of Risks and Threats to the Rights and Freedoms of Individuals
15.5.2. Risk Assessment
15.5.3. Risk Management Plan
15.6. Proactive Accountability Measures
15.6.1. Identifying Techniques to Ensure and Accredit Compliance
15.6.2. Organizational Measures
15.6.3. Technical Measures
15.6.4. Management of Personal Data Security Breaches
15.6.5. The Register of Processing Activities
15.7. The Data Protection Impact Assessment (DPA or DPIA)
15.7.1. Activities Requiring PCIA
15.7.2. Evaluation Methodology
15.7.3. Identification of Risks, Threats and Consultation with the Control Authority
15.8. Contractual Regulation: Persons Responsible, Persons in Charge and Other Subjects
15.8.1. Data Protection Contracts
15.8.2. Attribution of Responsibilities
15.8.3. Contracts between Both Responsible Parties
15.9. International Data Transfers
15.9.1. Definition and Safeguards to Be Adopted
15.9.2. Standard Contractual Clauses
15.9.3. Other Instruments to Regulate Transfers
15.10. Violations and Penalties
15.10.1. Violations and Penalties
15.10.2. Graduation Criteria for Penalties
15.10.3. The Data Protection Officer
15.10.4. Functions of the Supervisory Authorities

Module 16. Scalable and Reliable Mass Data Usage Systems

16.1. Scalability, Reliability and Maintainability
- 16.1.1. Scales
- 16.1.2. Reliability
- 16.1.3. Maintainability

16.2. Data Models
- 16.2.1. Evolution of Data Models
- 16.2.2. Comparison of Relational Model with Document-Based NoSQL Model
- 16.2.3. Network Model

16.3. Data Storage and Retrieval Engines
- 16.3.1. Structured Log Storage
- 16.3.2. Storage in Segment Tables
- 16.3.3. Trees B

16.4. Services, Message Passing and Data Encoding Formats
- 16.4.1. Data Flow in REST Services
- 16.4.2. Data Flow in Message Passing
- 16.4.3. Message Sending Formats

16.5. Replication
- 16.5.1. CAP Theorem
- 16.5.2. Consistency Models
- 16.5.3. Models of Replication Based on Leader and Follower Concepts

16.6. Distributed Transactions
- 16.6.1. Atomic Operations
- 16.6.2. Distributed Transactions from Different Approaches Calvin, Spanner
- 16.6.3. Serializability

16.7. Partitions
- 16.7.1. Types of Partitions
- 16.7.2. Indexes in Partitions
- 16.7.3. Partition Rebalancing

16.8. Batch Processing
- 16.8.1. Batch Processing
- 16.8.2. MapReduce
- 16.8.3. Post-MapReduce Approaches

16.9. Data Stream Processing
- 16.9.1. Messaging Systems
- 16.9.2. Persistence of Data Flows
- 16.9.3. Uses and Operations with Data Flows

16.10. Case Uses. Twitter, Facebook, Uber
- 16.10.1. Twitter: The Use of Caches
- 16.10.2. Facebook: Non-Relational Models
- 16.10.3. Uber: Different Models for Different Purposes

Module 17. System Administration for Distributed Deployments

17.1. Classic Administration. The Monolithic Model
- 17.1.1. Classical Applications. The Monolithic Model
- 17.1.2. System Requirements for Monolithic Applications
- 17.1.3. The Administration of Monolithic Systems
- 17.1.4. Automization

17.2. Distributed Applications. The Microservice
- 17.2.1. Distributed Computing Paradigm
- 17.2.2. Microservices-Based Models
- 17.2.3. System Requirements for Distributed Models
- 17.2.4. Monolithic vs. Distributed Applications

17.3. Tools for Resource Exploitation
- 17.3.1. "Iron" Management
- 17.3.2. Virtualization
- 17.3.3. Emulation
- 17.3.4. Paravirtualization

17.4. IaaS, PaaS and SaaS Models
- 17.4.1. LaaS Model
- 17.4.2. PaaS Model
- 17.4.3. SaaS Model
- 17.4.4. Design Patterns

17.5. Containerization
- 17.5.1. Virtualization with Cogroups
- 17.5.2. Containers
- 17.5.3. From Application to Container
- 17.5.4. Container Orchestration

17.6. Clustering
- 17.6.1. High Performance and High Availability
- 17.6.2. High Availability Models
- 17.6.3. Cluster as SaaS Platform
- 17.6.4. Cluster Securitization

17.7. Cloud Computing
- 17.7.1. Clusters vs Clouds
- 17.7.2. Types of Clouds
- 17.7.3. Clouds Service Models
- 17.7.4. Oversubscription

17.8. Monitoring and Testing
- 17.8.1. Types of Monitoring
- 17.8.2. Visualization
- 17.8.3. Infrastructure Tests
- 17.8.4. Chaos Engineering

17.9. Study Case: Kubernetes
- 17.9.1. Structure
- 17.9.2. Administration
- 17.9.3. Deployment of Services
- 17.9.4. Development of Services for K8S

17.10. Study Case: OpenStack
- 17.10.1. Structure
- 17.10.2. Administration
- 17.10.3. Deployment
- 17.10.4. Development of Services for OpenStack

Module 18. Project Management and Agile Methodologies

18.1. Project Management
- 18.1.1. The Project
- 18.1.2. Phases of a Project
- 18.1.3. Project Management

18.2. PMI Methodology for Project Management
- 18.2.1. PMI (Project Management Institute)
- 18.2.2. PMBOK
- 18.2.3. Difference between Project, Program and Project Portfolio
- 18.2.4. Evolution of Organizations Working with Projects
- 18.2.5. Process Assets in Organizations

18.3. PMI Methodology for Project Management: Processes
- 18.3.1. Groups of Processes
- 18.3.2. Knowledge Areas
- 18.3.3. Process Matrix

18.4. Agile Methodologies for Project Management
- 18.4.1. VUCA context (Volatility, Uncertainty, Complexity and Ambiguity)
- 18.4.2. Agile Values
- 18.4.3. Principles of the Agile Manifesto

18.5. Agile Scrum Framework for Project Management
- 18.5.1. Scrum
- 18.5.2. The Pillars of the Scrum Methodology
- 18.5.3. The Values in Scrum

18.6. Agile Scrum Framework for Project Management. Process
- 18.6.1. The Scrum Process
- 18.6.2. Typified Roles in a Scrum Process
- 18.6.3. The Ceremonies of Scrum

18.7. Agile Scrum Framework for Project Management. Artefacts
- 18.7.1. Artefacts in the Scrum Process
- 18.7.2. The Scrum Team
- 18.7.3. Metrics for Evaluating the Performance of a Scrum Team

18.8. Agile Scrum Framework for Project Management. Kanban Method
- 18.8.1. Kanban
- 18.8.2. Benefits of Kanban
- 18.8.3. Kanban Method Components

18.9. Agile Scrum Framework for Project Management. Kanban Method Practices
- 18.9.1. The Values of Kanban
- 18.9.2. Principles of the Kanban Method
- 18.9.3. General Practices of the Kanban Method
- 18.9.4. Metrics for Kanban Performance Evaluation

18.10. Comparison: PMI, Scrum and Kanban
- 18.10.1. PMI- SCRUM
- 18.10.2. PMI- KANBAN
- 18.10.3. SCRUM - KANBAN

Module 19. Communication, Leadership and Team Management

19.1. Organizational Development in Business
- 19.1.1. Climate, Culture and Organizational Development in the Company
- 19.1.2. Human Capital Management

19.2. Direction Models Decision Making
- 19.2.1. Paradigm Shift in Management Models
- 19.2.2. Management Process of the Technology Company
- 19.2.3. Decision Making Planning Instruments

19.3. Leadership. Delegation and Empowerment
- 19.3.1. Leadership
- 19.3.2. Delegation and Empowerment
- 19.3.3. Performance Evaluation

19.4. Leadership. Knowledge and Talent Management
- 19.4.1. Talent Management in the Company
- 19.4.2. Engagement Management in the Company
- 19.4.3. Improving Communication in the Company

19.5. Coaching Applied to Business
- 19.5.1. Executive Coaching
- 19.5.2. Team Coaching

19.6. Mentoring Applied to Business
- 19.6.1. Mentor Profile
- 19.6.2. The 4 Processes of a Mentoring Program
- 19.6.3. Tools and Techniques in a Mentoring Process
- 19.6.4. Benefits of Mentoring in the Business Environment

19.7. Team Management I. Interpersonal Relations
- 19.7.1. Interpersonal Relationships
- 19.7.2. Relational Styles: Approach
- 19.7.3. Effective Meetings and Agreements in Difficult Situations

19.8. Team Management II. The Conflicts
- 19.8.1. The Conflicts
- 19.8.2. Preventing, Addressing and Resolving Conflict
  - 19.8.2.1. Strategies to Prevent Conflict
  - 19.8.2.2. Conflict Management. Basic Principles
- 19.8.3. Conflict Resolution Strategies
- 19.8.4. Stress and Work Motivation

19.9. Team Management III. Negotiation
- 19.9.1. Negotiation at the Managerial Level in Technology Companies
- 19.9.2. Styles of Negotiation
- 19.9.3. Negotiation Phases
  - 19.9.3.1. Barriers to Overcome in Negotiations

19.10. Team Management IV. Negotiation Techniques
- 19.10.1. Negotiation Techniques and Strategies
  - 19.10.1.1. Strategies and Main Types of Negotiation
  - 19.10.1.2. Negotiation Tactics and Practical Issues
- 19.10.2. The Figure of the Negotiating Subject

Do not miss the opportunity to mark a before and after in your professional career and enroll now in this MBA in Data Science Management"

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"

Case Study to contextualize all content

Our program offers a revolutionary approach to developing skills and knowledge. Our goal is to strengthen skills in a changing, competitive, and highly demanding environment.

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

You will have access to a learning system based on repetition, with natural and progressive teaching throughout the entire syllabus.

The student will learn to solve complex situations in real business environments through collaborative activities and real cases.

A learning method that is different and innovative

This TECH program is an intensive educational program, created from scratch, which presents the most demanding challenges and decisions in this field, both nationally and internationally. This methodology promotes personal and professional growth, representing a significant step towards success. The case method, a technique that lays the foundation for this content, ensures that the most current economic, social and professional reality is taken into account.

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

The case method has been the most widely used learning system among the world's leading Information Technology schools for as long as they have existed. The case method was developed in 1912 so that law students would not only learn the law based on theoretical content. It consisted of presenting students with real-life, complex situations for them to make informed decisions and value judgments on how to resolve them. In 1924, Harvard adopted it as a standard teaching method.

What should a professional do in a given situation? This is the question that you are presented with in the case method, an action-oriented learning method. Throughout the course, students will be presented with multiple real cases. They will have to combine all their knowledge and research, and argue and defend their ideas and decisions.

Relearning Methodology

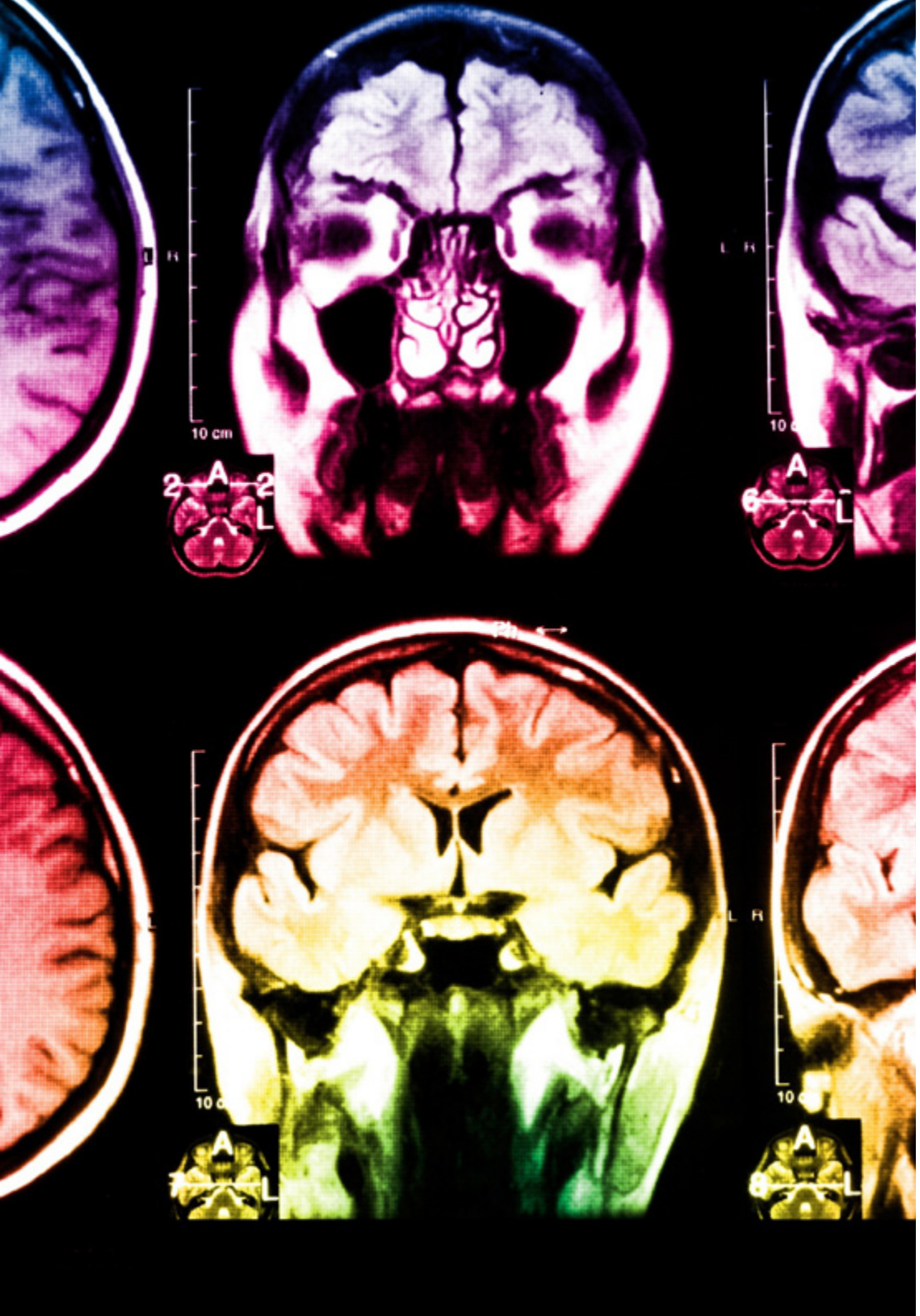
TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines different teaching elements in each lesson.

We enhance the Case Study with the best 100% online teaching method: Relearning.

In 2019, we obtained the best learning results of all online universities in the world.

At TECH you will learn using a cutting-edge methodology designed to train the executives of the future. This method, at the forefront of international teaching, is called Relearning.

Our university is the only one in the world authorized to employ this successful method. In 2019, we managed to improve our students' overall satisfaction levels (teaching quality, quality of materials, course structure, objectives...) based on the best online university indicators.



In our program, learning is not a linear process, but rather a spiral (learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically. This methodology has trained more than 650,000 university graduates with unprecedented success in fields as diverse as biochemistry, genetics, surgery, international law, management skills, sports science, philosophy, law, engineering, journalism, history, and financial markets and instruments. All this in a highly demanding environment, where the students have a strong socio-economic profile and an average age of 43.5 years.

Relearning will allow you to learn with less effort and better performance, involving you more in your training, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation for success.

From the latest scientific evidence in the field of neuroscience, not only do we know how to organize information, ideas, images and memories, but we know that the place and context where we have learned something is fundamental for us to be able to remember it and store it in the hippocampus, to retain it in our long-term memory.

In this way, and in what is called neurocognitive context-dependent e-learning, the different elements in our program are connected to the context where the individual carries out their professional activity.

This program offers the best educational material, prepared with professionals in mind:

Study Material

All teaching material is produced by the specialists who teach the course, specifically for the course, so that the teaching content is highly specific and precise.

These contents are then applied to the audiovisual format, to create the TECH online working method. All this, with the latest techniques that offer high quality pieces in each and every one of the materials that are made available to the student.

Classes

There is scientific evidence suggesting that observing third-party experts can be useful.

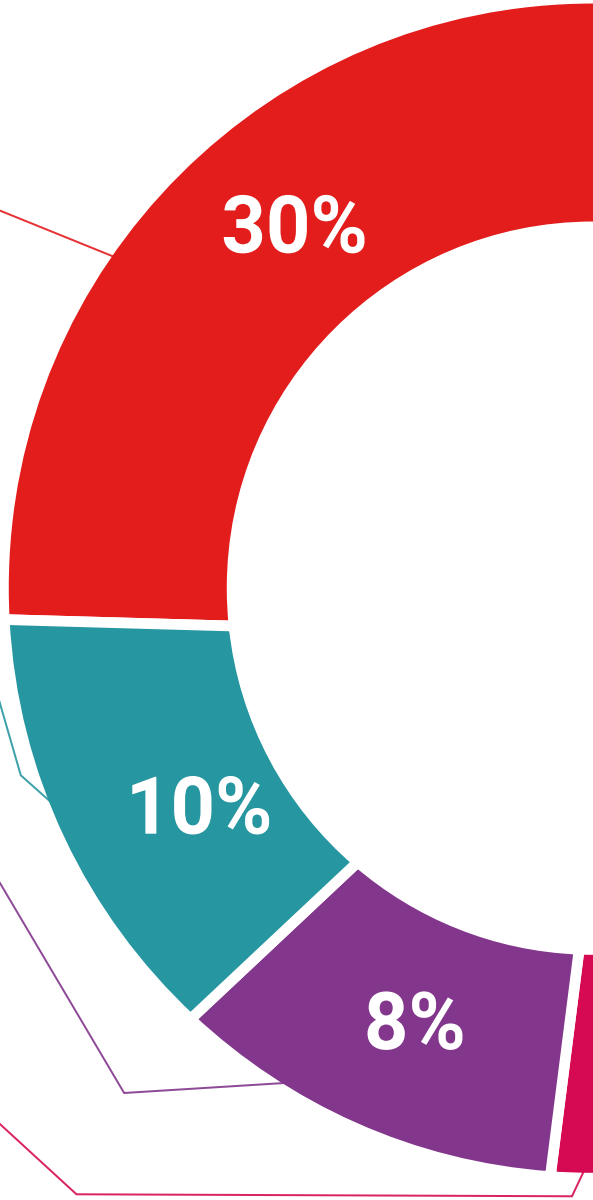
Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

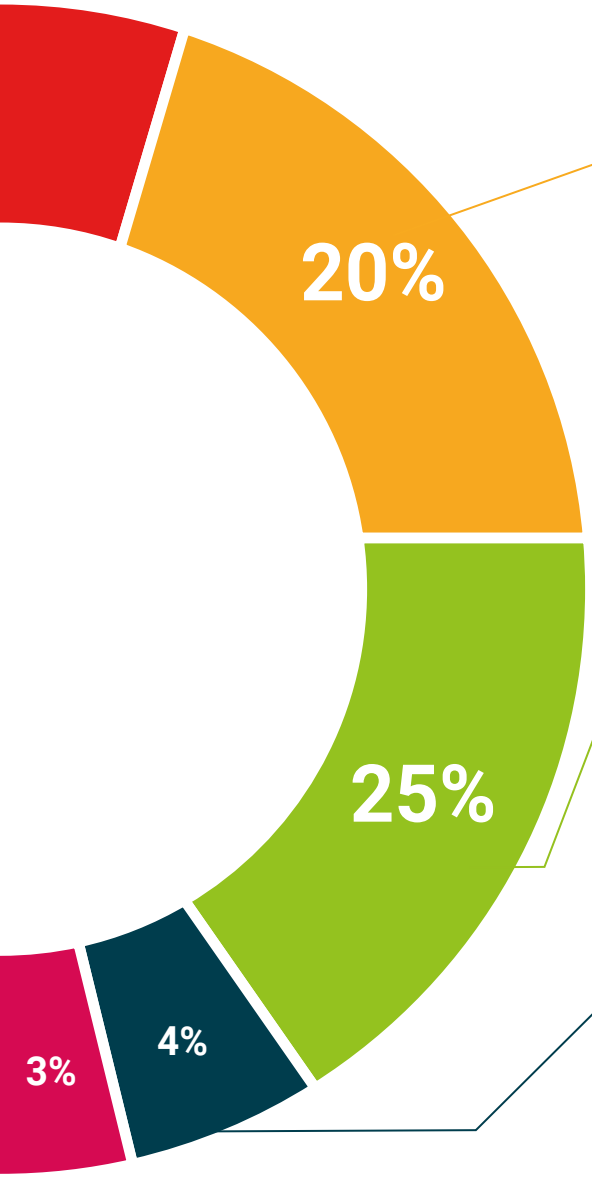
Practising Skills and Abilities

They will carry out activities to develop specific skills and abilities in each subject area. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop in the context of the globalization that we are experiencing.

Additional Reading

Recent articles, consensus documents and international guidelines, among others. In TECH's virtual library, students will have access to everything they need to complete their course.





Case Studies

Students will complete a selection of the best case studies chosen specifically for this program. Cases that are presented, analyzed, and supervised by the best specialists in the world.

Interactive Summaries

The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

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

Testing & Retesting

We periodically evaluate and re-evaluate students' knowledge throughout the program, through assessment and self-assessment activities and exercises, so that they can see how they are achieving their goals.

07

Certificate

The MBA in Data Science Management guarantees you, in addition to the most rigorous and up-to-date training, access to a Advanced Master's Degree issued by TECH Technological University.

Successfully complete this program and receive your university diploma without the need for travel or laborious paperwork”

This **MBA in Data Science Management** contains the most complete and up-to-date program on the market.

After the student has passed the assessments, they will receive their corresponding **Advanced Master's Degree** issued by **TECH Technological University** via tracked delivery*.

The certificate issued by **TECH Technological University** will reflect the qualification obtained in the Advanced Master's Degree, and meets the requirements commonly demanded by labor exchanges, competitive examinations, and professional career evaluation committees.

Title: **Advanced Master's Degree MBA in Data Science Management**

Official N° of hours: **3,000 h.**

tech technological university

Awards the following

CERTIFICATE

to

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

For having successfully passed and accredited the following program

ADVANCED MASTER'S DEGREE

in

MBA in Data Science Management

This is a qualification awarded by this University, equivalent to 3,000 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

Advanced Master's Degree in MBA in Data Science Management

General Structure of the Syllabus

Year	Subject	Hours	Type
1º	Data Analytics in the Business Organization	157	CO
1º	Data Management, Data Manipulation and Data Science Reporting	157	CO
1º	IoT Devices and Platforms as a Foundation for Data Science	157	CO
1º	Graphical Representation for Data Analysis	157	CO
1º	Data Science Tools	157	CO
1º	Data Mining Selection, Pre-Processing and Transformation	157	CO
1º	Predictability and Analysis of Stochastic Phenomena	157	CO
1º	Design and Development of Intelligent Systems	157	CO
1º	Tools for Implementing Deep Neural Networks	157	CO

Year	Subject	Hours	Type
2º	Practical Application of Data Science in Sectors of Business Activity	157	CO
2º	Main Information Management Systems	157	CO
2º	Data Types and Data Life Cycle	157	CO
2º	Number - Machine Learning	157	CO
2º	Web Analytics	157	CO
2º	Data Management Regulations	157	CO
2º	Scalable and Reliable Mass Data Usage Systems	157	CO
2º	System Administration for Distributed Deployments	157	CO
2º	Project Management and Agile Methodologies	157	CO
2º	Communication, Leadership and Team Management	174	CO

Tere Guevara Navarro
Dean

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*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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Advanced Master's Degree
MBA in Data Science Management

- Modality: **online**
- Duration: **2 years**
- Certificate: **TECH Technological University**
- Dedication: **16h/week**
- Schedule: **at your own pace**
- Exams: **online**

Advanced Master's Degree

MBA in Data Science Management

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