Executive Master's Degree

Artificial Intelligence

MIA

tech technological university

tech technological university

Executive Master's Degree
Artificial Intelligence

- Modality: **online**
- Duration: **12 months**
- Certificate: **TECH Technological University**
- Dedication: **16h/week**
- Schedule: **at your own pace**
- Exams: **online**
- Target Group: **University Graduates, Diploma and Bachelor's Degree Holders who have previously completed any of the programs in the field of Engineering, Computer Science and/or Business**

Website: **www.techtitute.com/pk/school-of-business/executive-master-degree/master-artificial-intelligence**

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01

Welcome

Artificial Intelligence has radically transformed the way entrepreneurs operate and make decisions in their own organizations. By applying AI techniques, companies can analyze large volumes of data quickly and accurately, identifying patterns, trends and opportunities that might otherwise go unnoticed. From process optimization to customizing the customer experience, AI has become a fundamental pillar to drive efficiency, innovation and sustainable growth in the business world. For this reason, TECH has created this academic program completely online, based on the revolutionary Relearning methodology, consisting of repeating the key concepts for optimal knowledge acquisition.

Executive Master's Degree in Artificial Intelligence
TECH Technological University

Prepare your company for the future with TECH! You will incorporate the most current AI procedures and with all the guarantees to move towards success"

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 center for intensive managerial skills education.

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 balances 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.

+100000
executives prepared 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 analyses in academia"

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 (postgraduate learning methodology with the best international valuation) with the Case Study. Tradition and vanguard in a difficult balance, and in the context of the most demanding educational 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 education of the highest academic level"

This program will provide you with a multitude of professional and personal advantages, among which we highlight the following:

01

A Strong Boost to Your Career

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 students achieve positive career development in less than 2 years.

02

Develop a strategic and global vision of the company

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

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

You will 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 fields 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

You will be part of an exclusive community

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

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

04

Objectives

This Executive Master's Degree in Artificial Intelligence will be key for the entrepreneur to equip himself with the skills and knowledge needed to apply AI in the dynamic business world. The program has been designed to cultivate a deep understanding of how AI can strategically transform business operations. Therefore, its main objective will be to equip professionals with specific tools to implement innovative solutions, make decisions based on data and lead initiatives that promote growth and competitive advantage in this field.

Don't miss this unique opportunity offered by TECH! This will be your gateway to the domain of Artificial Intelligence applied to business"

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

The **Executive Master's Degree in Artificial Intelligence** will train the students to:

01 Analyze the historical evolution of Artificial Intelligence, from its beginnings to its current state, identifying key milestones and developments

02 Analyze the importance of thesauri, vocabularies and taxonomies in the structuring and processing of data for AI systems

03 Explore the concept of the semantic web and its influence on the organization and understanding of information in digital environments

04 Analyze the regulatory aspects related to data management, complying with privacy and security regulations, as well as best practices

05 Explore the process of transforming data into information using data mining and visualization techniques

06 Explore Bayesian methods and their application in machine learning, including Bayesian networks and Bayesian classifiers

08 Explore text mining and natural language processing (NLP), understanding how machine learning techniques are applied to analyze and understand text

09 Tuning hyperparameters for *Fine Tuning* of neural networks, optimizing their performance on specific tasks

07 Study *clustering* techniques to identify patterns and structures in unlabeled data sets

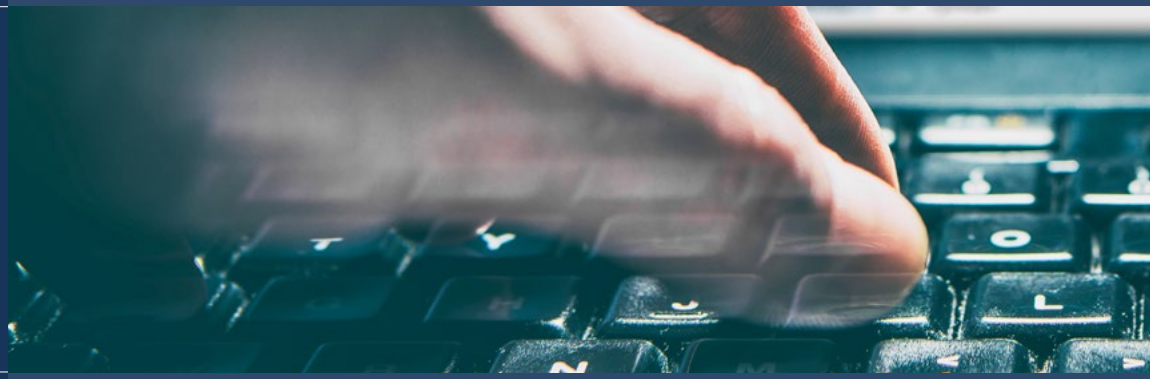
10 Solve gradient-related problems in deep neural network training

11 Master the fundamentals of *TensorFlow* and its integration with NumPy for efficient data management and calculations

12 Implement clustering layers and their use in Deep Computer Vision models with Keras

13 Analyze various Convolutional Neural Network (CNN) architectures and their applicability in different contexts

14 Develop and implement a CNN ResNet using the Keras library to improve model efficiency and performance



15 Analyze and use *Transformers* models in specific NLP tasks

16 Explore the application of *Transformers* models in the context of image processing and computer vision

17 Become familiar with the *Hugging Face Transformers* library for efficient implementation of advanced models

18 Compare different *Transformers* libraries to evaluate their suitability for specific tasks

19 Develop a practical application of NLP that integrates RNN and attention mechanisms to solve real-world problems

20 Optimize human resources processes through the strategic use of artificial intelligence

05

Skills

This university program will give graduates the skills they need to succeed in a competitive and constantly evolving business environment. From advanced data analysis and machine learning, to computational vision and natural language processing, students will acquire the essential tools to design and develop innovative solutions, applying Artificial Intelligence in their companies. This approach will ensure the preparation of entrepreneurs, not only to understand the theory behind AI, but also to apply it successfully in business contexts, generating an immediate and significant impact on their working environments.

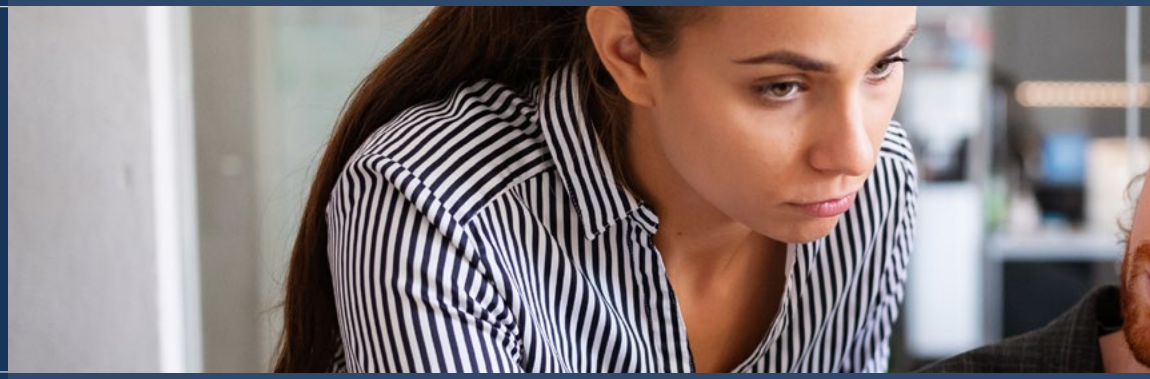
You will hone the skills needed to excel as an AI expert manager. Enroll now!"

01 Apply AI techniques and strategies to improve efficiency in the retail sector

02 Delve into understanding and application of genetic algorithms

03 Implement noise removal techniques using automatic encoders

04 Effectively create training data sets for natural language processing (NLP) tasks



05 Run grouping layers and their use in *Deep Computer Vision* models with Keras

06 Use *TensorFlow* features and graphics to optimize the performance of custom models

07 Optimize the development and application of *chatbots* and virtual assistants, understanding their operation and potential applications

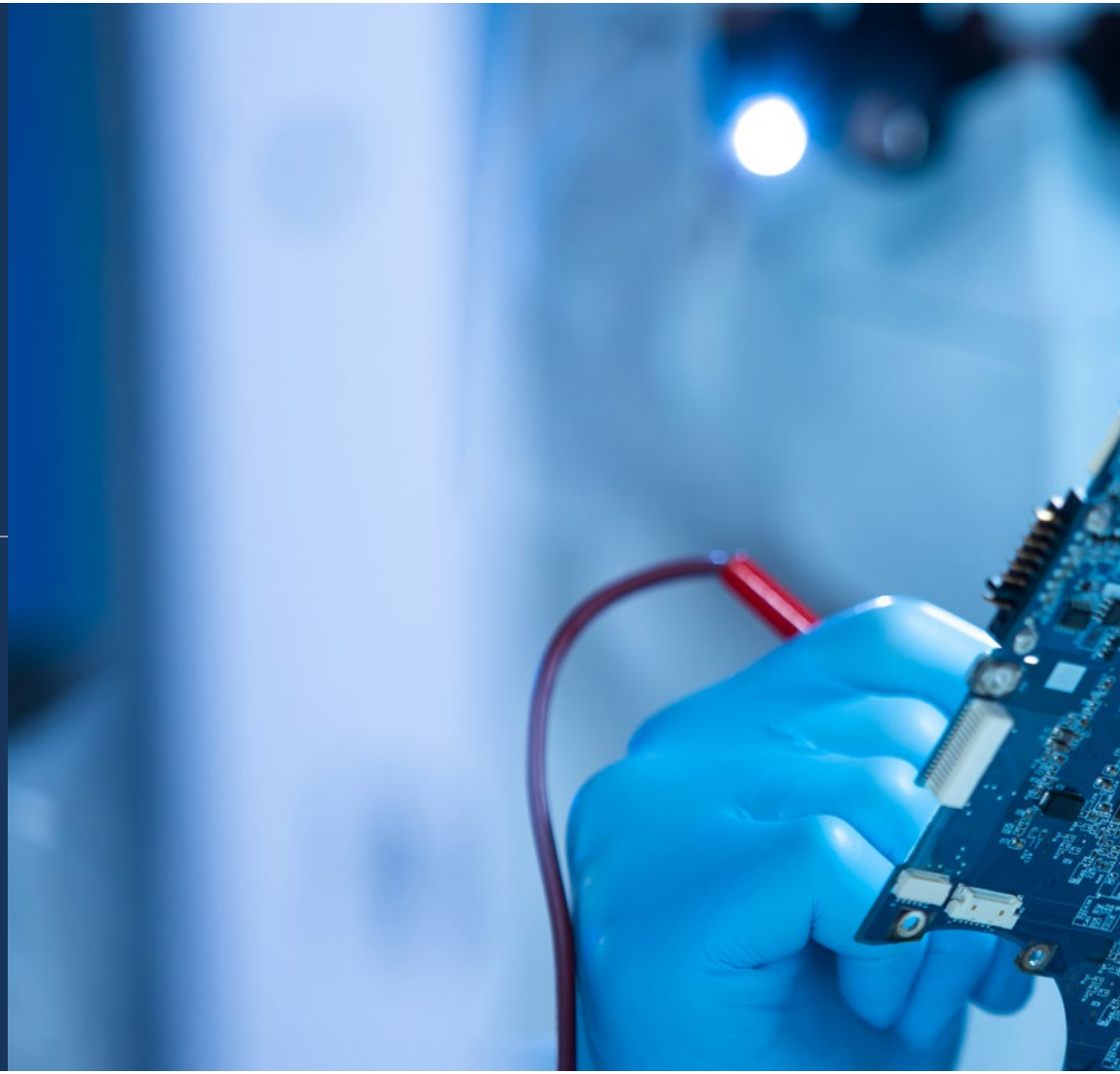
08 Master reuse of pre-workout layers to optimize and accelerate the training process

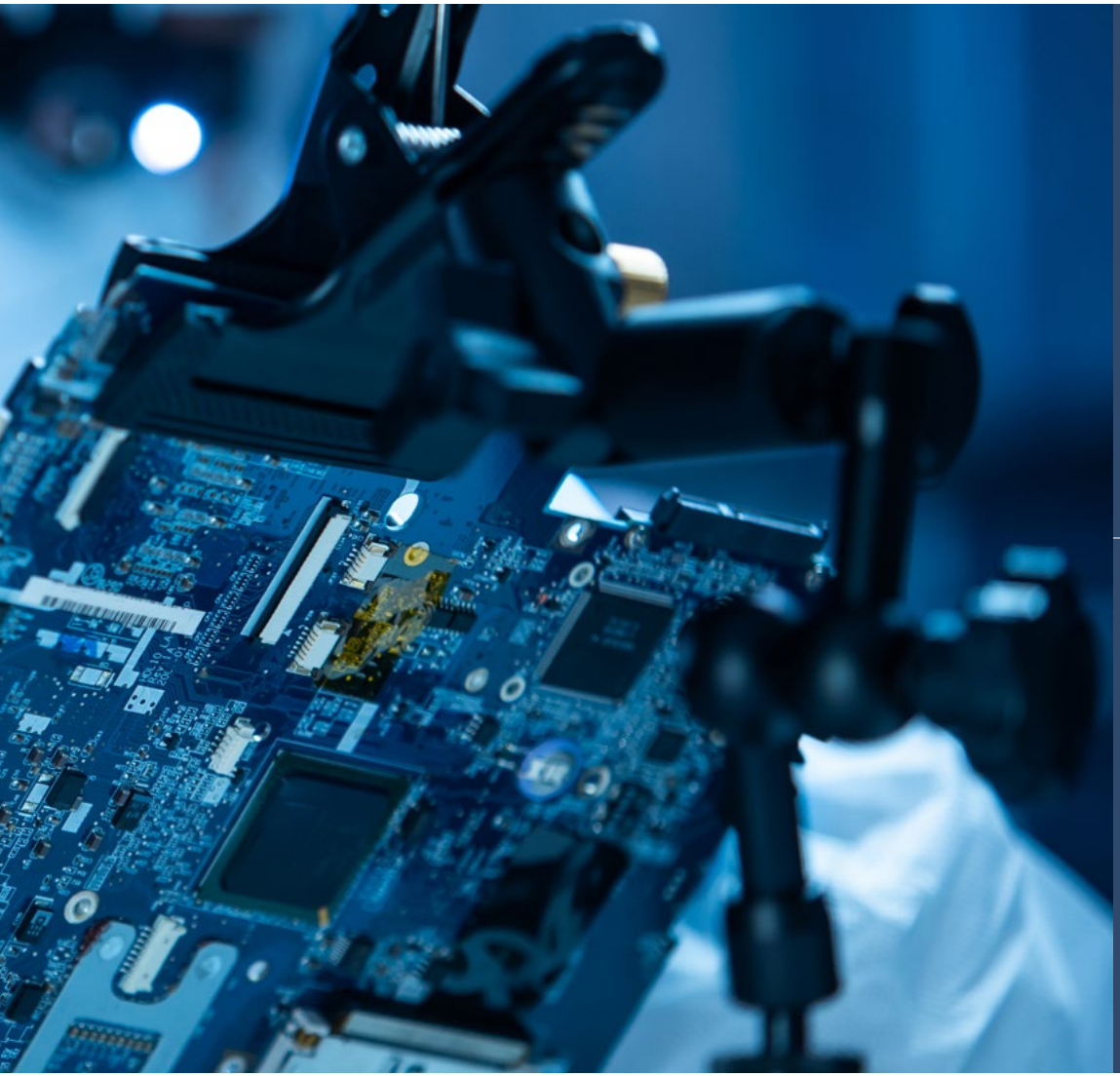
09 Build the first neural network, applying the concepts learned in practice

10 Activate Multilayer Perceptron (MLP) using the Keras library

11 Apply data scanning and preprocessing techniques, identifying and preparing data for effective use in machine learning models

12 Implement effective strategies for handling missing values in datasets, applying imputation or elimination methods according to context





13 Investigate languages and software for the creation of ontologies, using specific tools for the development of semantic models

14 Develop data cleaning techniques to ensure the quality and accuracy of the information used in subsequent analyses

06

Structure and Content

The Professional Master's Degree in Artificial Intelligence is a tailor-made program that is taught in 100% online format so you can choose the time and place that best suits your availability, schedules and interests. A program that takes place over 12 months and is intended to be a unique and stimulating experience that lays the foundation for your professional success.

You will delve into the data as part of Artificial Intelligence, from its extraction and grouping by types, to its subsequent processing and analysis"

Syllabus

The syllabus of this Professional Master's Degree has been designed with the aim of providing graduates with the most cutting-edge knowledge in AI. Therefore, professionals will acquire the necessary tools to develop optimization processes inspired by biological evolution. They can then identify and implement effective solutions to complex problems with a deep grasp of AI.

This is an exclusive academic program in which students will explore the essential foundations of AI. In this way, it will integrate its use into mass-use applications, allowing them to understand how these platforms can enrich the user experience and maximize operational efficiency.

Also, to facilitate the assimilation and retention of all concepts, TECH bases all its programs on the innovative and effective methodology *Relearning*. Under this approach, students will strengthen their understanding by repeating key concepts throughout the program, presented in various audiovisual formats to achieve a natural and gradual acquisition of skills.

A syllabus focused on professional improvement for the achievement of work objectives that is offered through an innovative and flexible online learning system that allows graduates to combine teaching with their other tasks.

Module 1	Fundamentals of Artificial Intelligence
Module 2	Data Types and Data Life Cycle
Module 3	Data in Artificial Intelligence
Module 4	Data Mining: Selection, Pre-Processing and Transformation
Module 5	Algorithm and Complexity in Artificial Intelligence
Module 6	Intelligent Systems
Module 7	Machine Learning and Data Mining
Module 8	Neural Networks, the Basis of Deep Learning
Module 9	Deep Neural Networks Training
Module 10	Model Customization and Training with *TensorFlow*
Module 11	Deep Computer Vision with Convolutional Neural Networks
Module 12	Natural Language Processing (NLP) with Recurrent Neural Networks (RNN) and Attention
Module 13	*Autoencoders*, *GANs*, and Diffusion Models
Module 14	Bio-Inspired Computing
Module 15	Artificial Intelligence: Strategies and Applications

Where, When and How is it Taught?

TECH offers the possibility to develop this Professional Master's Degree in Artificial Intelligence completely online. Throughout the 12 months of the educational program, 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. Fundamentals of Artificial Intelligence

1.1. History of Artificial Intelligence

1.1.1. When Do We Start Talking About Artificial Intelligence?
1.1.2. References in Film
1.1.3. Importance of Artificial Intelligence
1.1.4. Technologies that Enable and Support Artificial Intelligence

1.2. Artificial Intelligence in Games

1.2.1. Game Theory
1.2.2. Minimax and Alpha-Beta Pruning
1.2.3. Simulation: Monte Carlo

1.3. Neural Networks

1.3.1. Biological Fundamentals
1.3.2. Computational Model
1.3.3. Supervised and Unsupervised Neural Networks
1.3.4. Simple Perceptron
1.3.5. Multilayer Perceptron

1.4. Genetic Algorithms

1.4.1. History
1.4.2. Biological Basis
1.4.3. Problem Coding
1.4.4. Generation of the Initial Population
1.4.5. Main Algorithm and Genetic Operators
1.4.6. Evaluation of Individuals: Fitness

1.5. Thesauri, Vocabularies, Taxonomies

1.5.1. Vocabulary
1.5.2. Taxonomy
1.5.3. Thesauri
1.5.4. Ontologies
1.5.5. Knowledge Representation: Semantic Web

1.6. Semantic Web

1.6.1. Specifications RDF, RDFS and OWL
1.6.2. Inference/ Reasoning
1.6.3. Linked Data

1.7. Expert systems and DSS

1.7.1. Expert Systems
1.7.2. Decision Support Systems

1.8. *Chatbots* and Virtual Assistants

1.8.1. Types of Assistants: Voice and Text Assistants
1.8.2. Fundamental Parts for the Development of an Assistant: *Intents*, Entities and Dialog Flow
1.8.3. Integrations: Web, *Slack*, Whatsapp, Facebook
1.8.4. Assistant Development Tools: *Dialog Flow*, *Watson Assistant*

1.9. AI Implementation Strategy

1.10. Future of Artificial Intelligence

1.10.1. Understand How to Detect Emotions Using Algorithms
1.10.2. Creating a Personality: Language, Expressions and Content
1.10.3. Trends of Artificial Intelligence
1.10.4. Reflections

Module 2. Data Types and Data Life Cycle

2.1. Statistics
2.1.1. Statistics: Descriptive Statistics, Statistical Inferences
2.1.2. Population, Sample, Individual
2.1.3. Variables: Definition, Measurement Scales

2.2. Types of Data Statistics
2.2.1. According to Type
2.2.1.1. Quantitative: Continuous Data and Discrete Data
2.2.1.2. Qualitative: Binomial Data, Nominal Data and Ordinal Data
2.2.2. According to their Shape
2.2.2.1. Numeric
2.2.2.2. Text:
2.2.2.3. Logical
2.2.3. According to its Source
2.2.3.1. Primary
2.2.3.2. Secondary

2.3. Life Cycle of Data
2.3.1. Stages of the Cycle
2.3.2. Milestones of the Cycle
2.3.3. FAIR Principles

2.4. Initial Stages of the Cycle
2.4.1. Definition of Goals
2.4.2. Determination of Resource Requirements
2.4.3. Gantt Chart
2.4.4. Data Structure

2.5. Data Collection
2.5.1. Methodology of Data Collection
2.5.2. Data Collection Tools
2.5.3. Data Collection Channels

2.6. Data Cleaning
2.6.1. Phases of Data Cleansing
2.6.2. Data Quality
2.6.3. Data Manipulation (with R)

2.7. Data Analysis, Interpretation and Result Evaluation
2.7.1. Statistical Measures
2.7.2. Relationship Indexes
2.7.3. Data Mining

2.8. Data Warehouse (*Datawarehouse*)
2.8.1. Elements that Comprise it
2.8.2. Design
2.8.3. Aspects to Consider

2.9. Data Availability
2.9.1. Access
2.9.2. Uses
2.9.3. Security/Safety

2.10. Regulatory Aspects
2.10.1. Data Protection Law
2.10.2. Good Practices
2.10.3. Other Normative Aspects

Module 3. Data in Artificial Intelligence

3.1. Data Science
3.1.1. Data Science
3.1.2. Advanced Tools for Data Scientists

3.2. Data, Information and Knowledge
3.2.1. Data, Information and Knowledge
3.2.2. Types of Data
3.2.3. Data Sources

3.3. From Data to Information
3.3.1. Data Analysis
3.3.2. Types of Analysis
3.3.3. Extraction of Information from a *Dataset*

3.4. Extraction of Information Through Visualization
3.4.1. Visualization as an Analysis Tool
3.4.2. Visualization Methods
3.4.3. Visualization of a Data Set

3.5. Data Quality
3.5.1. Quality Data
3.5.2. Data Cleaning
3.5.3. Basic Data Pre-Processing

3.6. *Dataset*
3.6.1. *Dataset* Enrichment
3.6.2. The Curse of Dimensionality
3.6.3. Modification of Our Data Set

3.7. Unbalance
3.7.1. Classes of Unbalance
3.7.2. Unbalance Mitigation Techniques
3.7.3. Balancing a Dataset

3.8. Unsupervised Models
3.8.1. Unsupervised Model
3.8.2. Methods
3.8.3. Classification with Unsupervised Models

3.9. Supervised Models
3.9.1. Supervised Model
3.9.2. Methods
3.9.3. Classification with Supervised Models

3.10. Tools and Good Practices
3.10.1. Good Practices for Data Scientists
3.10.2. The Best Model
3.10.3. Useful Tools

Module 4. Data Mining: Selection, Pre-Processing and Transformation

4.1. Statistical Inference
4.1.1. Descriptive Statistics vs. Statistical Inference
4.1.2. Parametric Procedures
4.1.3. Non-Parametric Procedures

4.2. Exploratory Analysis
4.2.1. Descriptive Analysis
4.2.2. Visualization
4.2.3. Data Preparation

4.3. Data Preparation
4.3.1. Integration and Data Cleaning
4.3.2. Normalization of Data
4.3.3. Transforming Attributes

4.4. Missing Values
4.4.1. Treatment of Missing Values
4.4.2. Maximum Likelihood Imputation Methods
4.4.3. Missing Value Imputation Using Machine Learning

4.5. Noise in the Data
4.5.1. Noise Classes and Attributes
4.5.2. Noise Filtering
4.5.3. The Effect of Noise

4.6. The Curse of Dimensionality
4.6.1. Oversampling
4.6.2. Undersampling
4.6.3. Multidimensional Data Reduction

4.7. From Continuous to Discrete Attributes
4.7.1. Continuous Data Vs. Discreet Data
4.7.2. Discretization Process

4.8. The Data
4.8.1. Data Selection
4.8.2. Prospects and Selection Criteria
4.8.3. Selection Methods

4.9. Instance Selection
4.9.1. Methods for Instance Selection
4.9.2. Prototype Selection
4.9.3. Advanced Methods for Instance Selection

4.10. Data Pre-Processing in Big Data Environments

Module 5. Algorithm and Complexity in Artificial Intelligence

5.1. Introduction to Algorithm Design Strategies
5.1.1. Recursion
5.1.2. Divide and Conquer
5.1.3. Other Strategies

5.2. Efficiency and Analysis of Algorithms
5.2.1. Efficiency Measures
5.2.2. Measuring the Size of the Input
5.2.3. Measuring Execution Time
5.2.4. Worst, Best and Average Case
5.2.5. Asymptotic Notation
5.2.6. Criteria for Mathematical Analysis of Non-Recursive Algorithms
5.2.7. Mathematical Analysis of Recursive Algorithms
5.2.8. Empirical Analysis of Algorithms

5.3. Sorting Algorithms
5.3.1. Concept of Sorting
5.3.2. Bubble Sorting
5.3.3. Sorting by Selection
5.3.4. Sorting by Insertion
5.3.5. Merge Sort
5.3.6. Quick Sort

5.4. Algorithms with Trees
5.4.1. Tree Concept
5.4.2. Binary Trees
5.4.3. Tree Paths
5.4.4. Representing Expressions
5.4.5. Ordered Binary Trees
5.4.6. Balanced Binary Trees

5.5. Algorithms Using Heaps
5.5.1. Heaps
5.5.2. The Heapsort Algorithm
5.5.3. Priority Queues

5.6. Graph Algorithms
5.6.1. Representation
5.6.2. Traversal in Width
5.6.3. Depth Travel
5.6.4. Topological Sorting

5.7. Greedy Algorithms
5.7.1. Greedy Strategy
5.7.2. Elements of the Greedy Strategy
5.7.3. Currency Exchange
5.7.4. Traveler's Problem
5.7.5. Backpack Problem

5.8. Minimal Path Finding
5.8.1. The Minimum Path Problem
5.8.2. Negative Arcs and Cycles
5.8.3. Dijkstra's Algorithm

5.9. Greedy Algorithms on Graphs
5.9.1. The Minimum Covering Tree
5.9.2. Prim's Algorithm
5.9.3. Kruskal's Algorithm
5.9.4. Complexity Analysis

5.10. Backtracking
5.10.1. Backtracking
5.10.2. Alternative Techniques

Module 6. Intelligent Systems

6.1. Agent Theory
6.1.1. Concept History
6.1.2. Agent Definition
6.1.3. Agents in Artificial Intelligence
6.1.4. Agents in Software Engineering

6.2. Agent Architectures
6.2.1. The Reasoning Process of an Agent
6.2.2. Reactive Agents
6.2.3. Deductive Agents
6.2.4. Hybrid Agents
6.2.5. Comparison

6.3. Information and Knowledge
6.3.1. Difference between Data, Information and Knowledge
6.3.2. Data Quality Assessment
6.3.3. Data Collection Methods
6.3.4. Information Acquisition Methods
6.3.5. Knowledge Acquisition Methods

6.4. Knowledge Representation
6.4.1. The Importance of Knowledge Representation
6.4.2. Definition of Knowledge Representation According to Roles
6.4.3. Knowledge Representation Features

6.5. Ontologies
6.5.1. Introduction to Metadata
6.5.2. Philosophical Concept of Ontology
6.5.3. Computing Concept of Ontology
6.5.4. Domain Ontologies and Higher-Level Ontologies
6.5.5. How to Build an Ontology?

6.6. Ontology Languages and Ontology Creation Software
6.6.1. Triple RDF, *Turtle* and N
6.6.2. RDF *Schema*
6.6.3. OWL
6.6.4. SPARQL
6.6.5. Introduction to Ontology Creation Tools
6.6.6. Installing and Using *Protégé*

6.7. Semantic Web
6.7.1. Current and Future Status of the Semantic Web
6.7.2. Semantic Web Applications

6.8. Other Knowledge Representation Models
6.8.1. Vocabulary
6.8.2. Global Vision
6.8.3. Taxonomy
6.8.4. Thesauri
6.8.5. Folksonomy
6.8.6. Comparison
6.8.7. Mind Maps

6.9. Knowledge Representation Assessment and Integration
6.9.1. Zero-Order Logic
6.9.2. First-Order Logic
6.9.3. Descriptive Logic
6.9.4. Relationship between Different Types of Logic
6.9.5. *Prolog*: Programming Based on First-Order Logic

6.10. Semantic Reasoners, Knowledge-Based Systems and Expert Systems
6.10.1. Concept of Reasoner
6.10.2. Reasoner Applications
6.10.3. Knowledge-Based Systems
6.10.4. MYCIN: History of Expert Systems
6.10.5. Expert Systems Elements and Architecture
6.10.6. Creating Expert Systems

Module 7. Machine Learning and Data Mining

7.1. Introduction to Knowledge Discovery Processes and Basic Concepts of Machine Learning
7.1.1. Key Concepts of Knowledge Discovery Processes
7.1.2. Historical Perspective of Knowledge Discovery Processes
7.1.3. Stages of the Knowledge Discovery Processes
7.1.4. Techniques Used in Knowledge Discovery Processes
7.1.5. Characteristics of Good Machine Learning Models
7.1.6. Types of Machine Learning Information
7.1.7. Basic Learning Concepts
7.1.8. Basic Concepts of Unsupervised Learning

7.2. Data Exploration and Pre-processing
7.2.1. Data Processing
7.2.2. Data Processing in the Data Analysis Flow
7.2.3. Types of Data
7.2.4. Data Transformations
7.2.5. Visualization and Exploration of Continuous Variables
7.2.6. Visualization and Exploration of Categorical Variables
7.2.7. Correlation Measures
7.2.8. Most Common Graphic Representations
7.2.9. Introduction to Multivariate Analysis and Dimensionality Reduction

7.3. Decision Trees
7.3.1. ID Algorithm
7.3.2. Algorithm C
7.3.3. Overtraining and Pruning
7.3.4. Analysis of Results

7.4. Evaluation of Classifiers
7.4.1. Confusion Matrixes
7.4.2. Numerical Evaluation Matrixes
7.4.3. Kappa Statistic
7.4.4. ROC Curves

7.5. Classification Rules
7.5.1. Rule Evaluation Measures
7.5.2. Introduction to Graphic Representation
7.5.3. Sequential Overlay Algorithm

7.6. Neural Networks
7.6.1. Basic Concepts
7.6.2. Simple Neural Networks
7.6.3. Backpropagation Algorithm
7.6.4. Introduction to Recurrent Neural Networks

7.7. Bayesian Methods
7.7.1. Basic Probability Concepts
7.7.2. Bayes' Theorem
7.7.3. Naive Bayes
7.7.4. Introduction to Bayesian Networks

7.8. Regression and Continuous Response Models
7.8.1. Simple Linear Regression
7.8.2. Multiple Linear Regression
7.8.3. Logistic Regression
7.8.4. Regression Trees
7.8.5. Introduction to Support Vector Machines (SVM)
7.8.6. Goodness-of-Fit Measures

7.9. Clustering
7.9.1. Basic Concepts
7.9.2. Hierarchical Clustering
7.9.3. Probabilistic Methods
7.9.4. EM Algorithm
7.9.5. B-Cubed Method
7.9.6. Implicit Methods

7.10. Text Mining and Natural Language Processing (NLP)
7.10.1. Basic Concepts
7.10.2. Corpus Creation
7.10.3. Descriptive Analysis
7.10.4. Introduction to Feelings Analysis

Module 8. Neural Networks, the Basis of Deep Learning

8.1. Deep Learning
8.1.1. Types of Deep Learning
8.1.2. Applications of Deep Learning
8.1.3. Advantages and Disadvantages of Deep Learning

8.2. Surgery
8.2.1. Sum
8.2.2. Product
8.2.3. Transfer

8.3. Layers
8.3.1. Input layer
8.3.2. Cloak
8.3.3. Output layer

8.4. Union of Layers and Operations
8.4.1. Architecture Design
8.4.2. Connection between layers
8.4.3. Forward propagation

8.5. Construction of the first neural network
8.5.1. Network Design
8.5.2. Establish the weights
8.5.3. Network Training

8.6. Trainer and Optimizer
8.6.1. Optimizer Selection
8.6.2. Establishment of a Loss Function
8.6.3. Establishing a Metric

8.7. Application of the Principles of Neural Networks
8.7.1. Activation Functions
8.7.2. Backward Propagation
8.7.3. Parameter Adjustment

8.8. From Biological to Artificial Neurons
8.8.1. Functioning of a Biological Neuron
8.8.2. Transfer of Knowledge to Artificial Neurons
8.8.3. Establish Relations Between the Two

8.9. Implementation of MLP (Multilayer Perceptron) with Keras
8.9.1. Definition of the Network Structure
8.9.2. Model Compilation
8.9.3. Model Training

8.10. Fine tuning hyperparameters of neural networks
8.10.1. Selection of the Activation Function
8.10.2. Set the *Learning* Rate
8.10.3. Adjustment of Weights

Module 9. Deep Neural Networks Training

9.1. Gradient Problems
9.1.1. Gradient Optimization Techniques
9.1.2. Stochastic Gradients
9.1.3. Weight Initialization Techniques

9.2. Reuse of Pre-Trained Layers
9.2.1. Learning transfer training
9.2.2. Feature Extraction
9.2.3. Deep Learning

9.3. Optimizers
9.3.1. Stochastic Gradient Descent Optimizers
9.3.2. Optimizers Adam and *RMSprop*
9.3.3. Moment Optimizers

9.4. Programming of the learning rate
9.4.1. Automatic Learning Rate Control
9.4.2. Learning Cycles
9.4.3. Smoothing Terms

9.5. Overfitting
9.5.1. Cross Validation
9.5.2. Regularization
9.5.3. Evaluation Metrics

9.6. Practical Guidelines
9.6.1. Model Design
9.6.2. Selection of metrics and evaluation parameters
9.6.3. Hypothesis Testing

9.7. Transfer Learning
9.7.1. Learning Transfer Training
9.7.2. Feature Extraction
9.7.3. Deep Learning

9.8. Data Augmentation
9.8.1. Image Transformations
9.8.2. Synthetic Data Generation
9.8.3. Text Transformation

9.9. Practical Application of Transfer Learning
9.9.1. Learning Transfer Training
9.9.2. Feature Extraction
9.9.3. Deep Learning

9.10. Regularization
9.10.1. L and L
9.10.2. Regularization by Maximum Entropy
9.10.3. *Dropout*

Module 10. Model Customization and Training with *TensorFlow*

10.1. TensorFlow
10.1.1. Use of the TensorFlow Library
10.1.2. Model Training with TensorFlow
10.1.3. Operations with Graphs in TensorFlow

10.2. TensorFlow and NumPy
10.2.1. NumPy Computing Environment for TensorFlow
10.2.2. Using NumPy Arrays with TensorFlow
10.2.3. NumPy Operations for TensorFlow Graphs

10.3. Model Customization and Training Algorithms
10.3.1. Building Custom Models with TensorFlow
10.3.2. Management of Training Parameters
10.3.3. Use of Optimization Techniques for Training

10.4. TensorFlow Features and Graphs
10.4.1. Functions with TensorFlow
10.4.2. Use of Graphs for Model Training
10.4.3. Graphs Optimization with TensorFlow Operations

10.5. Loading and Preprocessing Data with TensorFlow
10.5.1. Loading Data Sets with TensorFlow
10.5.2. Preprocessing Data with TensorFlow
10.5.3. Using TensorFlow Tools for Data Manipulation

10.6. The tf.data API
10.6.1. Using the tf.dataAPI for Data Processing
10.6.2. Construction of Data Streams with tf.data
10.6.3. Using the tf.data API for Model Training

10.7. The TFRecord Format
10.7.1. Using the TFRecordAPI for Data Serialization
10.7.2. TFRecord File Upload with TensorFlow
10.7.3. Using TFRecord Files for Model Training

10.8. Layers of Preprocessing of Keras
10.8.1. Using the Keras Preprocessing API
10.8.2. Preprocessing Pipelined Construction with Keras
10.8.3. Using the Keras Preprocessing API for Model Training

10.9. The TensorFlow Datasets Project
10.9.1. Using TensorFlow Datasets for Data Loading
10.9.2. Preprocessing Data with TensorFlow Datasets
10.9.3. Using TensorFlow Datasets for Model Training

10.10. Building a Deep Learning App with TensorFlow
10.10.1. Practical Application
10.10.2. Building a Deep Learning App with TensorFlow
10.10.3. Model training with TensorFlow
10.10.4. Using the Application to Predict Results

Module 11. Deep Computer Vision with Convolutional Neural Networks

11.1. The Visual Cortex Architecture
11.1.1. Functions of the Visual Cortex
11.1.2. Theories of Computational Vision
11.1.3. Models of Image Processing

11.2. Convolutional Layers
11.2.1. Reuse of Weights in Convolution
11.2.2. Convolution D
11.2.3. Activation Functions

11.3. Layers of Grouping and Implementation of Layers of Grouping with Keras
11.3.1. Pooling and Striding
11.3.2. Flattening
11.3.3. Types of Pooling

11.4. CNN Architecture
11.4.1. VGG Architecture
11.4.2. *AlexNet* Architecture
11.4.3. Architecture *ResNet*

11.5. Implementing a CNN ResNet-using Keras
11.5.1. Weight Initialization
11.5.2. Input Layer Definition
11.5.3. Output Definition

11.6. Use of pre-trained Keras models
11.6.1. Characteristics of Pre-trained Models
11.6.2. Uses of Pre-trained Models
11.6.3. Advantages of Pre-trained Models

11.7. Pre-trained Models for Transfer Learning
11.7.1. Transfer Learning
11.7.2. Transfer Learning Process
11.7.3. Advantages of Transfer Learning

11.8. Deep Computer Vision Classification and Localization
11.8.1. Image Classification
11.8.2. Localization of Objects in Images
11.8.3. Object Detection

11.9. Object Detection and Object Tracking
11.9.1. Object Detection Methods
11.9.2. Object Tracking Algorithms
11.9.3. Tracking and Localization Techniques

11.10. Semantic Segmentation
11.10.1. Deep Learning for Semantic Segmentation
11.10.2. Edge Detection
11.10.3. Segmentation methods based on rules

Module 12. Natural Language Processing (NLP) with Recurrent Neural Networks (RNN) and Attention

12.1. Text Generation using RNN
12.1.1. Training an RNN for Text Generation
12.1.2. Natural Language Generation with RNN
12.1.3. Text Generation Applications with RNN

12.2. Training Data Set Creation
12.2.1. Preparation of the Data for Training an RNN
12.2.2. Storage of training data set
12.2.3. Data Cleaning and Transformation
12.2.4. Sentiment Analysis

12.3. Rating of reviews with RNN
12.3.1. Detection of Themes in Comments
12.3.2. Sentiment analysis with deep learning algorithms

12.4. Encoder-Decoder Network for Neural Machine Translation
12.4.1. Training an RNN for Machine Translation
12.4.2. Use of an *Encoder-Decoder* Network for Machine Translation
12.4.3. Improving the Accuracy of Machine Translation with RNNs

12.5. Attention Mechanisms
12.5.1. Application of Care Mechanisms in NRN
12.5.2. Use of Care Mechanisms to Improve the Accuracy of the Models
12.5.3. Advantages of Attention Mechanisms in Neural Networks

12.6. Transformer Models
12.6.1. Using *Transformers*Models for Natural Language Processing
12.6.2. Application of *Transformers* Models for Vision
12.6.3. Advantages of *Transformers* Models

12.7. Transformers for Vision
12.7.1. Use of *Transformers* Models for Vision
12.7.2. Image Data Preprocessing
12.7.3. Training a Transformers Model for Vision

12.8. Hugging Face's Transformers Bookstore
12.8.1. Using the Hugging Face's TransformersLibrary
12.8.2. Hugging Face's TransformersLibrary App
12.8.3. Advantages of Hugging Face's Transformerslibrary

12.9. Other *Transformers* Libraries. Comparison
12.9.1. Comparison Between Different Transformerslibraries
12.9.2. Use of the Other Transformers Libraries
12.9.3. Advantages of the Other Transformers Libraries

12.10. Development of an NLP Application with RNN and Attention. Practical Application
12.10.1. Development of a Natural Language Processing Application with RNN and Attention
12.10.2. Use of RNN, Attention Mechanisms and Transformers Models in the Application
12.10.3. Evaluation of the Practical Application

Module 13. *Autoencoders*, *GANs*, and Diffusion Models

13.1. Representation of Efficient Data
13.1.1. Dimensionality Reduction
13.1.2. Deep Learning
13.1.3. Compact Representations

13.2. PCA Realization with an Incomplete Linear Automatic Encoder
13.2.1. Training Process
13.2.2. Implementation in Python
13.2.3. Use of Test Data

13.3. Stacked Automatic Encoders
13.3.1. Deep Neural Networks
13.3.2. Construction of Coding Architectures
13.3.3. Use of Regularization

13.4. Convolutional Autoencoders
13.4.1. Design of Convolutional Models
13.4.2. Convolutional Model Training
13.4.3. Results Evaluation

13.5. Automatic Encoder Denoising
13.5.1. Filter Application
13.5.2. Design of Coding Models
13.5.3. Use of Regularization Techniques

13.6. Sparse Automatic Encoders
13.6.1. Increasing Coding Efficiency
13.6.2. Minimizing the Number of Parameters
13.6.3. Using Regularization Techniques

13.7. Variational Automatic Encoders
13.7.1. Use of Variational Optimization
13.7.2. Unsupervised Deep Learning
13.7.3. Deep Latent Representations

13.8. Generation of fashion MNIST images
13.8.1. Pattern Recognition
13.8.2. Image Generation
13.8.3. Deep Neural Networks Training

13.9. Generative Adversarial Networks and Dissemination Models
13.9.1. Content Generation from Images
13.9.2. Modeling of Data Distributions
13.9.3. Use of Adversarial Networks

13.10. Implementation of the Models
13.10.1. Practical Application
13.10.2. Implementation of the Models
13.10.3. Use of Real Data
13.10.4. Results Evaluation

Module 14. Bio-Inspired Computing

14.1. Introduction to Bio-Inspired Computing
14.1.1. Introduction to Bio-Inspired Computing

14.2. Social Adaptation Algorithms
14.2.1. Bio-Inspired Computation Based on Ant Colonies
14.2.2. Variants of Ant Colony Algorithms
14.2.3. Particle Cloud Computing

14.3. Genetic Algorithms
14.3.1. General Structure
14.3.2. Implementations of the Major Operators

14.4. Space Exploration-Exploitation Strategies for Genetic Algorithms
14.4.1. CHC Algorithm
14.4.2. Multimodal Problems

14.5. Evolutionary Computing Models (I)
14.5.1. Evolutionary Strategies
14.5.2. Evolutionary Programming
14.5.3. Algorithms Based on Differential Evolution

14.6. Evolutionary Computation Models (II)
14.6.1. Evolutionary Models Based on Estimation of Distributions (EDA)
14.6.2. Genetic Programming

14.7. Evolutionary Programming Applied to Learning Problems
14.7.1. Rules-Based Learning
14.7.2. Evolutionary Methods in Instance Selection Problems

14.8. Multi-Objective Problems
14.8.1. Concept of Dominance
14.8.2. Application of Evolutionary Algorithms to Multi-Objective Problems

14.9. Neural Networks (I)
14.9.1. Introduction to Neural Networks
14.9.2. Practical Example with Neural Networks

14.10. Neural Networks (II)
14.10.1. Use Cases of Neural Networks in Medical Research
14.10.2. Use Cases of Neural Networks in Economics
14.10.3. Use Cases of Neural Networks in Artificial Vision

Module 15. Artificial Intelligence: Strategies and Applications

15.1. Financial Services
15.1.1. The implications of Artificial Intelligence (AI) in financial services. Opportunities and challenges
15.1.2. Case Uses
15.1.3. Potential Risks Related to the Use of AI
15.1.4. Potential Future Developments/Uses of AI

15.2. Implications of Artificial Intelligence in the Healthcare Service
15.2.1. Implications of AI in the Healthcare Sector. Opportunities and Challenges
15.2.2. Case Uses

15.3. Risks Related to the Use of AI in the Health Service
15.3.1. Potential Risks Related to the Use of AI
15.3.2. Potential Future Developments/Uses of AI

15.4. Retail
15.4.1. Implications of AI in *Retail*. Opportunities and Challenges
15.4.2. Case Uses
15.4.3. Potential Risks Related to the Use of AI
15.4.4. Potential Future Developments/Uses of AI

15.5. Industry
15.5.1. Implications of AI in Industry. Opportunities and Challenges
15.5.2. Case Uses

15.6. Potential Risks Related to the use of AI in Industry
15.6.1. Case Uses
15.6.2. Potential Risks Related to the Use of AI
15.6.3. Potential Future Developments/uses of AI

15.7. Public Administration
15.7.1. AI Implications for Public Administration. Opportunities and Challenges
15.7.2. Case Uses
15.7.3. Potential Risks Related to the Use of AI
15.7.4. Potential Future Developments/uses of AI

15.8. Educational
15.8.1. AI Implications for Education. Opportunities and Challenges
15.8.2. Case Uses
15.8.3. Potential Risks Related to the Use of AI
15.8.4. Potential Future Developments/uses of AI

15.9. Forestry and Agriculture
15.9.1. Implications of AI in Forestry and Agriculture. Opportunities and Challenges
15.9.2. Case Uses
15.9.3. Potential Risks Related to the Use of AI
15.9.4. Potential Future Developments/Uses of AI

15.10. Human Resources
15.10.1. Implications of AI for Human Resources Opportunities and Challenges
15.10.2. Case Uses
15.10.3. Potential Risks Related to the use of AI
15.10.4. Potential Future Developments/uses of AI

07

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

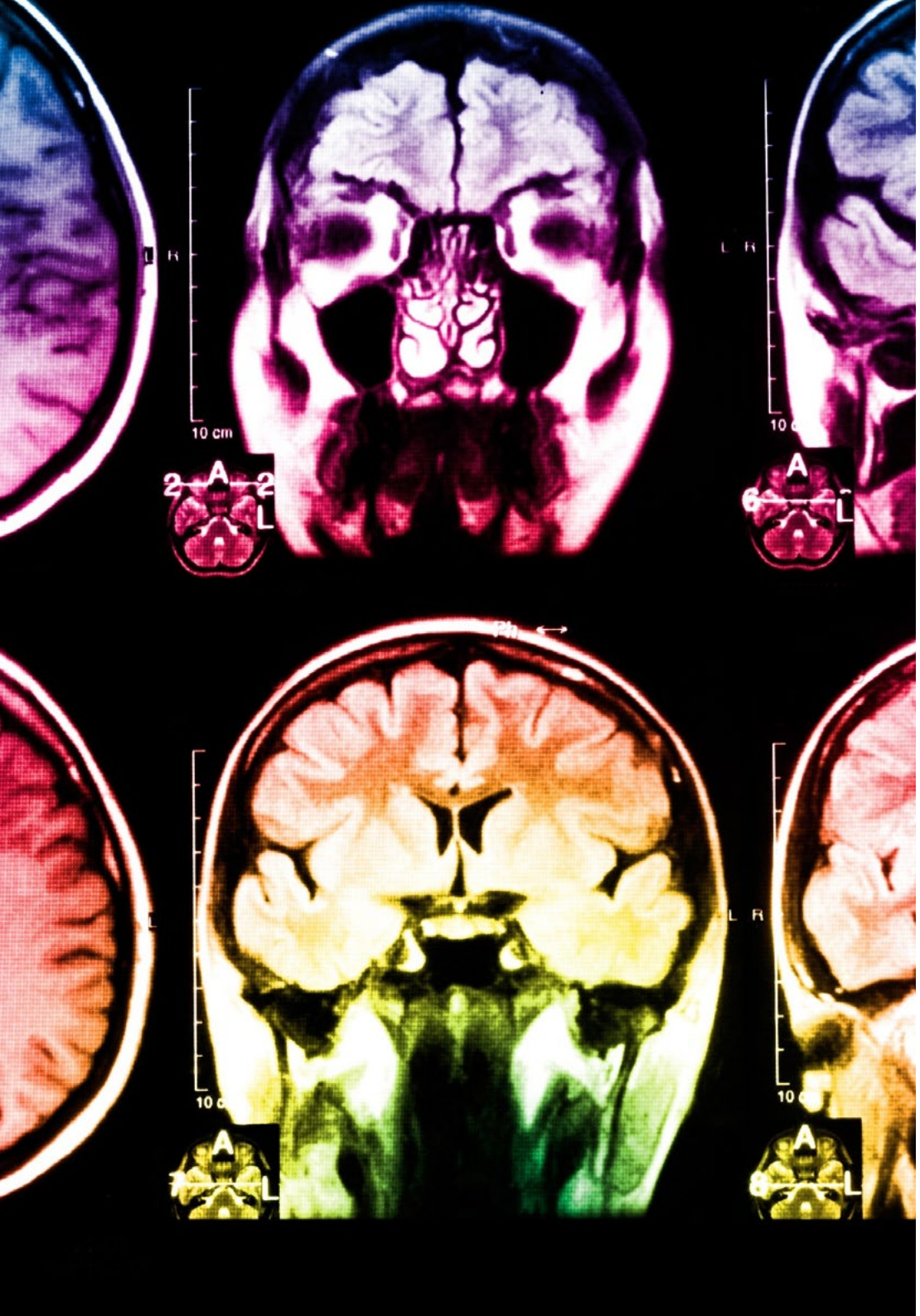
TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines different teaching elements in each lesson.

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.

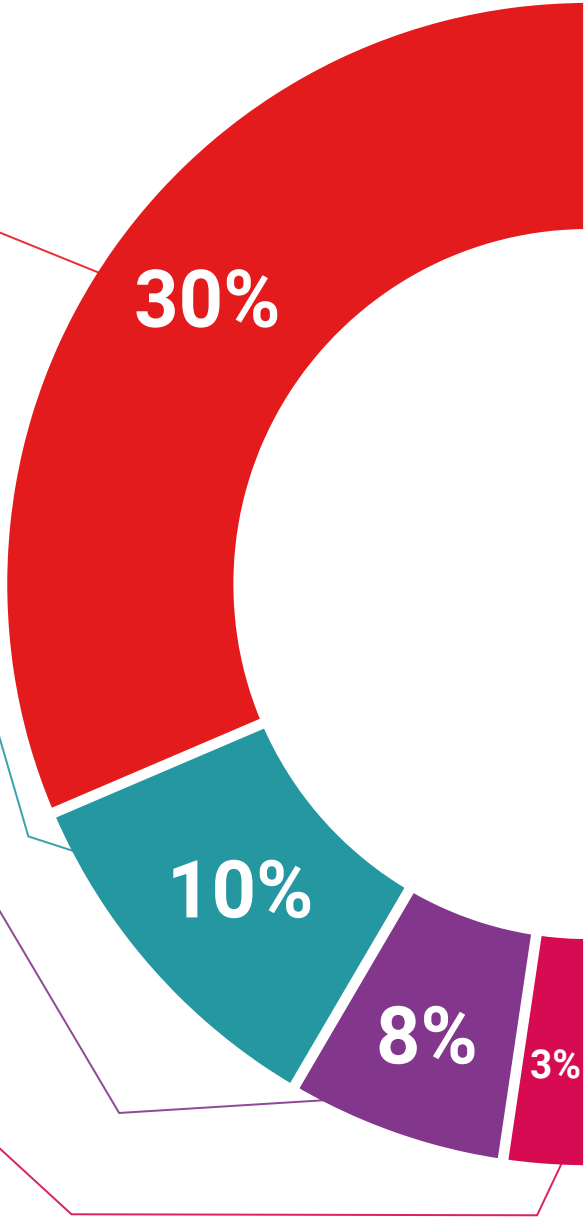
Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

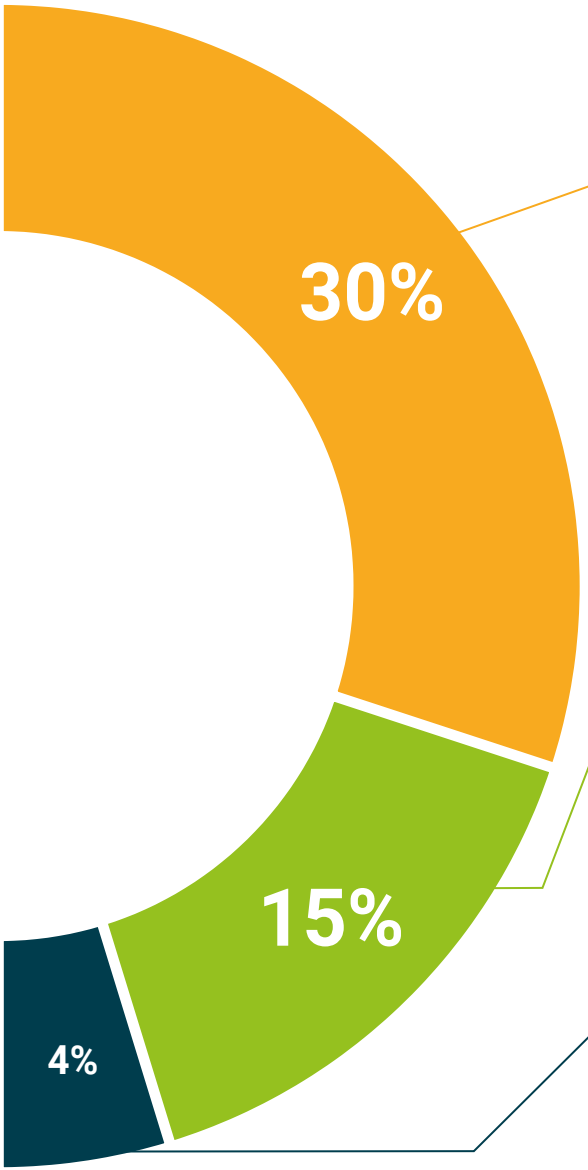
Management Skills Exercises

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.

08

Our Students’ Profiles

The program is aimed at University Graduates, Diploma and Bachelor's Degree Holders who have previously completed any of the programs in the field of Engineering, Computer Science and/or Business

This program uses a multidisciplinary approach as the students have a diverse set of academic profiles and represent multiple nationalities.

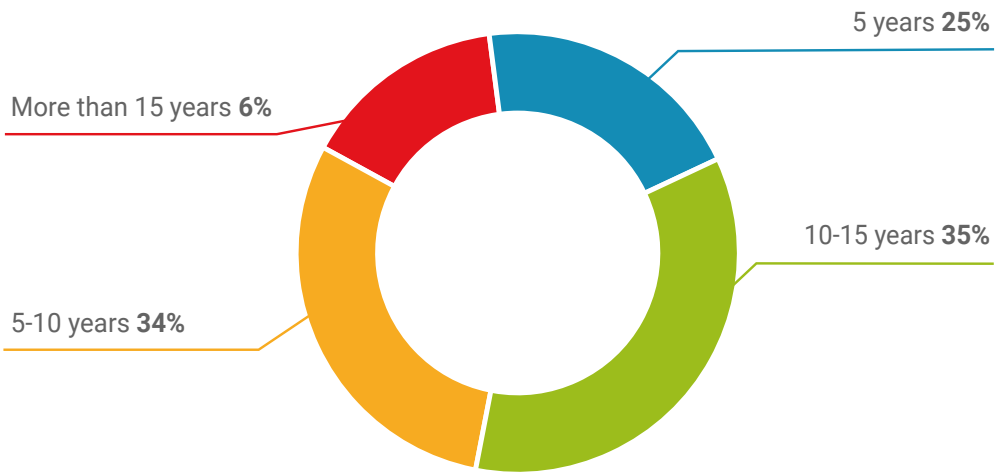
Professionals who, being university graduates in any area, have a two-year work experience in the field of Artificial Intelligence will also be able to do the Professional Master’s Degree.

You will access the latest innovations in Artificial Intelligence in 1,500 hours of exclusive resources. Only in TECH"

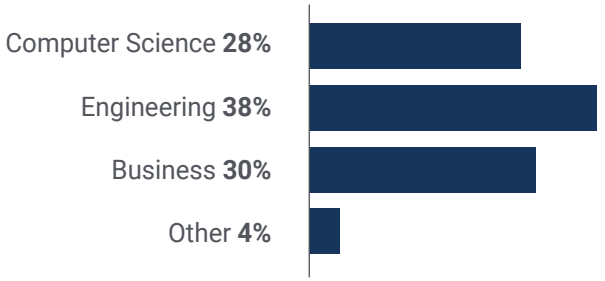
Average Age

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

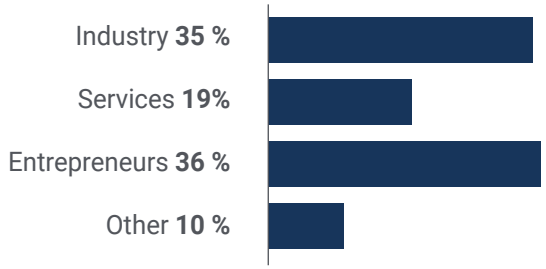
Years of Experience



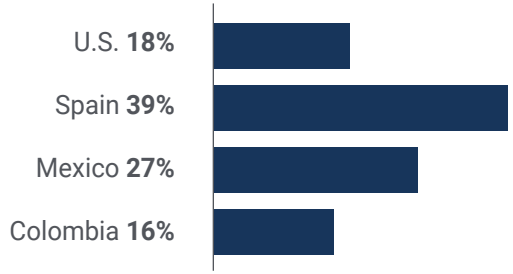
Training



Educational Profile



Geographical Distribution



Aarón Rodríguez

Directorate for Technological Innovation

"The Professional Master's Degree in Artificial Intelligence has been a transformative experience that has enhanced my career as a manager in engineering. It has allowed me to lead innovative projects and apply various techniques, from machine learning to natural language processing. It has been a crucial investment in my professional development and has contributed significantly to my business success"

09

Course Management

The teaching staff of this Professional Master's Degree has been selected for its academic excellence and extensive experience in the field of Artificial Intelligence. These professionals are not only leaders in their respective areas of specialization, but are also committed to the thorough preparation demanded by the entrepreneur. With an innovative, real-world approach, these specialists will provide a unique c ombination of cutting-edge academic knowledge and practical insights that are critical to succeeding at the intersection of technology and business.

Learn from the best! You will take your training to the maximum with the support of recognized professionals in Artificial Intelligence"

Management

Dr. Peralta Martín-Palomino, Arturo

- CEO and CTO at Prometeus Global Solutions
- CTO at Korporate Technologies
- CTO at AI Shephers GmbH
- Consultant and Strategic Business Advisor at Alliance Medical
- Director of Design and Development at DocPath
- PhD. in Psychology from the University of Castilla - La Mancha
- PhD in Economics, Business and Finance from the Camilo José Cela University
- PhD in Psychology from University of Castilla – La Mancha
- Máster in Executive MBA por la Universidad Isabel I
- Master's Degree in Sales and Marketing Management, Isabel I University
- Expert Master's Degree in Big Data by Hadoop Training
- Master's Degree in Advanced Information Technologies from the University of Castilla - la Mancha
- Member of: SMILE Research Group

10

Impact on Your Career

Aware of the relevance of Artificial Intelligence in many industries, from automotive to medical care and automotive, TECH is committed to an avant-garde program with first-rate content. For this reason, it has created this unique program that presents a professional challenge to obtain an unrivalled growth and professional development. This Professional Master's Degree stands as the best tool to prepare professionals capable of facing the challenges in this era of digital transformation and make them leaders in their respective fields.

Become an innovation leader and achieve business success by graduating from the best program in the digital academic landscape"

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

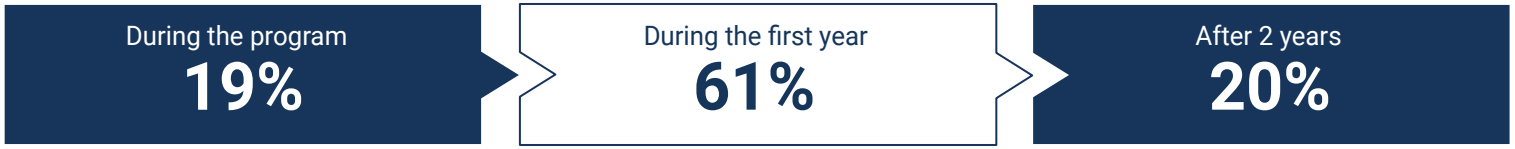
The Professional Master's Degree in Artificial Intelligence from TECH is an intensive program that prepares you to face challenges and business decisions in the field of Artificial Intelligence. The main objective is to promote your personal and professional growth. Helping you achieve success.

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

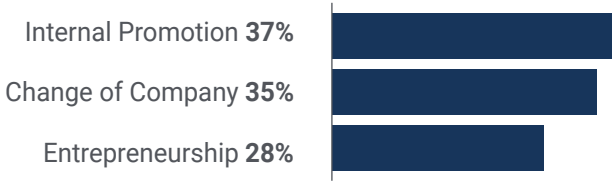
Raise your professional profile by efficiently mastering the technologies of the future with this exclusive university program that only TECH puts at your fingertips.

TECH has 99% employability among its graduates. Register now and excel in the labor market.

Time of change



Type of change



Salary increase

This program represents a salary increase of more than **26.24%** for our students

11

Benefits for Your Company

This program contributes to elevating the organization's talent to its maximum potential through the instruction of high-level leaders.

In addition, participating in this university option is a unique opportunity to access a powerful network of contacts in which to find future professional partners, customers or suppliers.

In the digital era, managers must integrate new processes and strategies that bring about significant changes and organizational development. This is only possible through university education and updating"

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

01

Growth of talent and intellectual capital

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

You 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 real project or develop new projects in the field of R & D or business development of your company.

06

Increased competitiveness

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

12

Certificate

The Executive Master's Degree in Artificial Intelligence guarantees students, in addition to the most rigorous and up-to-date education, access to a Executive Master's Degree diploma issued by TECH Technological University.

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

This **Executive Master's Degree in Artificial Intelligence** contains the most complete and up-to-date program on the market.

After the student has passed the assessments, they will receive their corresponding **Executive 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 Executive Master's Degree, and meets the requirements commonly demanded by labor exchanges, competitive examinations, and professional career evaluation committees.

Title: **Executive Master's Degree in Artificial Intelligence**

Official Nº of Hours: **1,500 h.**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Awards the following

CERTIFICATE

to

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

For having successfully passed and accredited the following program

EXECUTIVE MASTER'S DEGREE

in

Artificial Intelligence

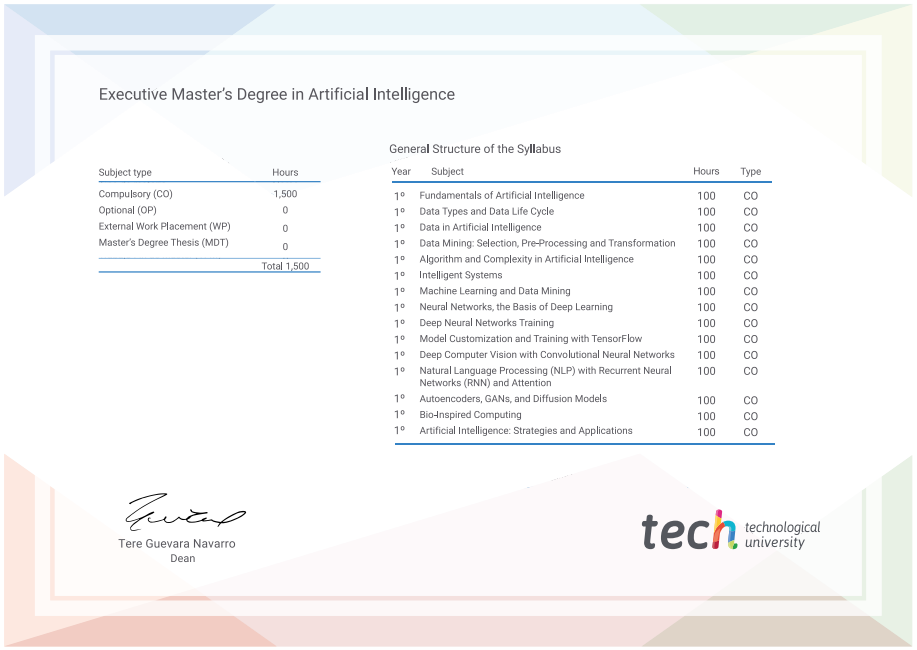
This is a qualification awarded by this University, equivalent to 1,500 hours, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

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


Executive Master's Degree in Artificial Intelligence

Subject type	Hours
Compulsory (CO)	1,500
Optional (OP)	0
External Work Placement (WP)	0
Master's Degree Thesis (MDT)	0
	Total 1,500

General Structure of the Syllabus

Year	Subject	Hours	Type
1º	Fundamentals of Artificial Intelligence	100	CO
1º	Data Types and Data Life Cycle	100	CO
1º	Data in Artificial Intelligence	100	CO
1º	Data Mining: Selection, Pre-Processing and Transformation	100	CO
1º	Algorithm and Complexity in Artificial Intelligence	100	CO
1º	Intelligent Systems	100	CO
1º	Machine Learning and Data Mining	100	CO
1º	Neural Networks, the Basis of Deep Learning	100	CO
1º	Deep Neural Networks Training	100	CO
1º	Model Customization and Training with TensorFlow	100	CO
1º	Deep Computer Vision with Convolutional Neural Networks	100	CO
1º	Natural Language Processing (NLP) with Recurrent Neural Networks (RNN) and Attention	100	CO
1º	Autoencoders, GANs, and Diffusion Models	100	CO
1º	Bio-Inspired Computing	100	CO
1º	Artificial Intelligence: Strategies and Applications	100	CO

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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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Executive Master's Degree
Artificial Intelligence

- Modality: **online**
- Duration: **12 months**
- Certificate: **TECH Technological University**
- Dedication: **16h/week**
- Schedule: **at your own pace**
- Exams: **online**

Executive Master's Degree

Artificial Intelligence

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