Postgraduate Certificate
NLP Natural Language Processing with RNN

tech global university

Postgraduate Certificate
NLP Natural Language Processing with RNN

- » Modality: **online**
- » Duration: **6 weeks**
- » Certificate: **TECH Global University**
- » Credits: **6 ECTS**
- » Schedule: **at your own pace**
- » Exams: **online**

Website: **www.techtitute.com/us/engineering/postgraduate-certificate/nlp-natural-language-processing-rnn**

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01
Introduction

Natural Language Processing (NLP) has become an essential tool in the technology-driven world, as it enables the understanding and generation of human language in artificial intelligence applications. Therefore, this TECH program provides the professional with a unique opportunity for comprehensive training in the use of Recurrent Neural Networks (RNN) for the analysis and generation of natural language. For this reason, this program has been designed to meet the growing demand for NLP experts, allowing engineers to acquire advanced skills in text processing and analysis. In addition, the online format of the program offers the flexibility necessary for graduates to adapt their study pace to their personal schedule and access theoretical and practical content from anywhere and at any time.

Get up-to-date on the use of an encoder-decoder network for machine translation and stand out as a high-level engineer"

Natural Language Processing (NLP) has gained increasing importance in many fields thanks to its ability to improve efficiency and decision making through process automation. From sentiment analysis in social networks to automatic language translation, NLP has proven to be an indispensable tool today.

Therefore, this unique program has been specifically designed to meet today's market needs, providing engineers with comprehensive instruction in natural language processing and the use of recurrent neural networks (RNN) as a tool for NLP modeling.

In order to improve student learning, TECH has created a complete program based on its exclusive Relearning methodology, which consists of the progressive and natural repetition of the fundamental concepts so that the graduate integrates them effectively. In this way, the student will acquire the necessary skills while adjusting the pace of study to their daily life.

In addition, the 100% online format of the program allows students to adapt their study pace to their needs and access the theoretical and practical contents from anywhere and at any time. With a practical approach and innovative methodology, this course offers students a unique opportunity to acquire skills that are highly valued in the market and contribute to the digital transformation of many companies around the world.

This **Postgraduate Certificate in NLP Natural Language Processing with RNN** contains the most complete and up-to-date program on the market. The most important features include:

- The development of case studies presented by experts in Deep Learning
- The graphic, schematic, and practical contents with which they are created, provide 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
- Its special emphasis on innovative methodologies
- 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

Give your career a significant boost by including this Postgraduate Certificate on your Resume"

"

Delve deeper into the Hugging Face Transformers library with this 180-hour Postgraduate Certificate"

Access a content-rich syllabus, where you will find a multitude of real examples and practical analyses that contextualize the topics covered.

Get up to date on the advantages of attention mechanisms in neural networks with this complete TECH program.

The program's teaching staff includes professionals from sector who contribute their work experience to this educational program, as well as renowned specialists from leading societies and prestigious universities.

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

The design of this program focuses on Problem-Based Learning, by means of which the professional must try to solve the different professional practice situations that are presented throughout the academic course. This will be done with the help of an innovative system of interactive videos made by renowned experts.

Objectives

This program has been developed with the objective of providing the graduate with access to the most cutting-edge theoretical, practical and additional contents in Natural Language Processing NLP with RNN and its multiple applications, in just 6 weeks. Due to the high level of demand of the syllabus, any professional will be able to achieve their most ambitious goals through this program that adapts to their needs and is presented in a 100% accessible and convenient online format.

"

Specialize in sentiment analysis with deep learning algorithms and boost your professional success"

General Objectives

- Lay the foundation for the key concepts of mathematical functions and their derivatives
- Apply these principles to deep learning algorithms to learn automatically
- Examine the key concepts of Supervised Learning and how they apply to neural network models
- Analyze the training, evaluation, and analysis of neural network models
- Lay the foundation for the key concepts and main applications of deep learning
- Implement and optimizes neural networks with Keras
- Develop expertise in the training of deep neural networks
- Analyze the optimization and regularization mechanisms necessary for deep network training

Specific Objectives

- Generate text using recurrent neural networks
- Train an encoder-decoder network to perform neural machine translation
- Develop a practical application of Natural Language Processing with RNN and Attention

You will be able to achieve even your most ambitious career goals thanks to a university program that will take you to the forefront of Deep Learning in Engineering"

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Course Management

TECH has carefully selected the teaching team for this program to ensure an elite education for students. These professionals have extensive work experience and prestige in the field of engineering, which allows them to provide a complete and current vision of the sector. In this way, students will be able to obtain the necessary tools to develop their work activity in a constantly changing and evolving environment, as well as to specialize with the most cutting-edge knowledge in Natural Language Processing NLP with RNN.

"

Delve into all the high quality multimedia documents that you will find in the Virtual Campus, made from the prism of the most rigorous professional experience"

Management

Mr. Gil Contreras, Armando

- Lead Big Data Scientist-Big Data at Jhonson Controls
- Data Scientist-Big Data at Opensistemas
- Fund Auditor at Creativity and Technology and PricewaterhouseCoopers
- Professor at EAE Business School
- Degree in Economics from the Instituto Tecnológico de Santo Domingo INTEC
- Master's Degree in Data Science at Centro Universitario de Tecnología y Arte
- Master MBA in International Relations and Business at Centro de Estudios Financieros CEF
- Postgraduate Degree in Corporate Finance at the Instituto Tecnológico de Santo Domingo

Professors

Ms. Delgado Feliz, Benedit

- Electronic Surveillance Assistant and Operator at the National Directorate of Drug Control
- Social Communication by the Catholic University of Santo Domingo
- Voiceover by the Otto Rivera School of Professional Voiceover

Mr. Matos, Dionis

- Data Engineer at Wide Agency Sodexo
- Data Consultant at Tokiota Site
- Data Engineer at Devoteam Testa Home
- Business Intelligence Developer at Ibermatica Daimler
- Máster Big Data and Analytics /Project Management(Minor) at EAE Business School

Mr. Villar Valor, Javier

- Director and Founder Partner Impulsa2
- Chief Operating Officer of Summa Insurance Brokers
- Responsible for identifying improvement opportunities at Liberty Seguros
- Director of Transformation and Professional Excellence at Johnson Controls Iberia
- Responsible for the organization of the company Groupama Seguros
- Responsible for Lean Six Sigma methodology at Honeywell
- Director of Quality and Purchasing at SP & PO
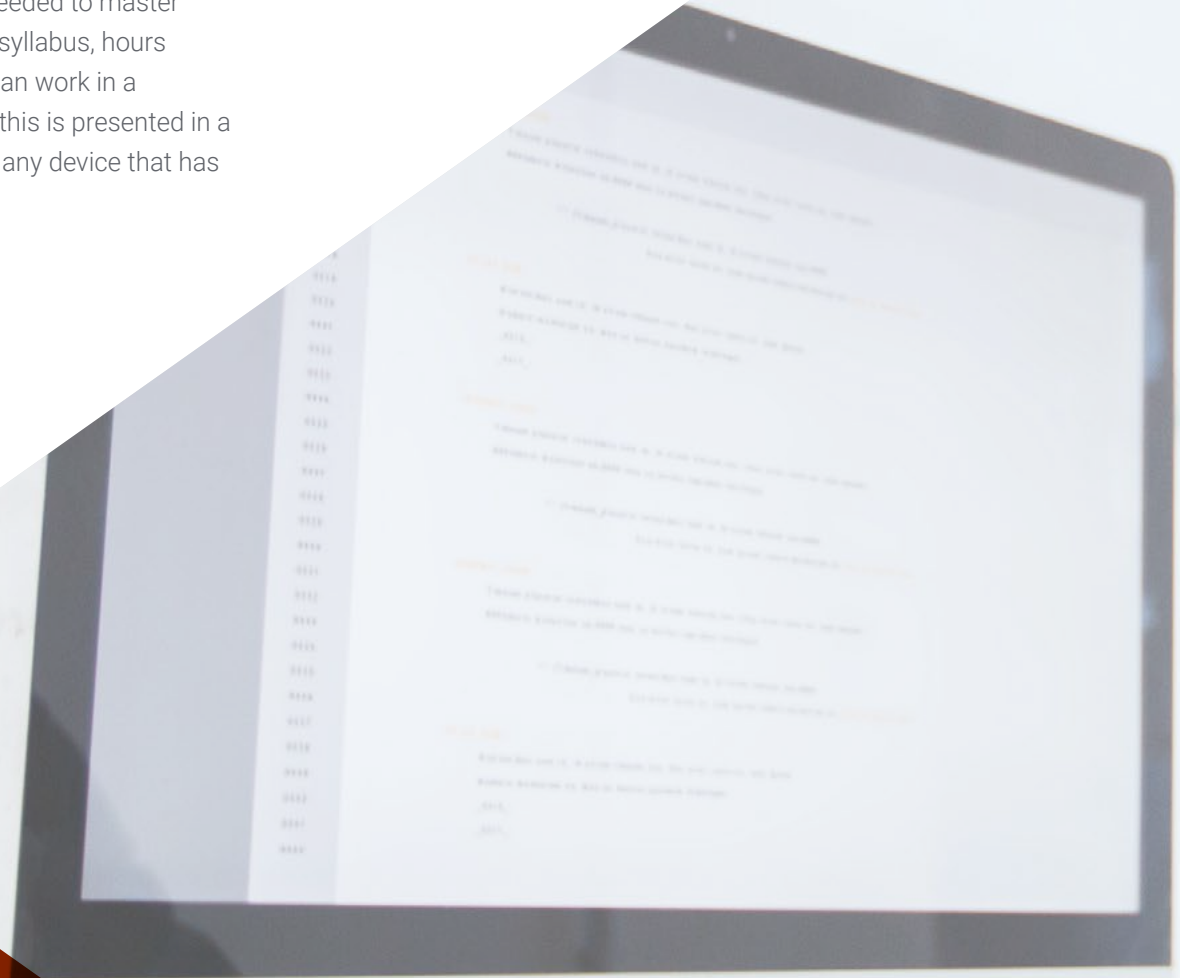- Professor at the European Business School

Ms. Gil de León, María

- Marketing Co-Director and Secretary at RAÍZ Magazine
- Copy Editor at Gauge Magazine
- Reader of Stork Magazine by Emerson College
- Bachelor's degree in Writing, Literature and Publishing awarded by Emerson College

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Structure and Content

This program has been designed by a team of experts in the field of Engineering, especially in Natural Language Processing with RNN. As a result, TECH has created a comprehensive and intensive syllabus that covers everything needed to master this discipline in a period of 6 weeks. In addition to the complete syllabus, hours of additional materials have been included so that the graduate can work in a personalized way and adapt to their needs and requirements. All this is presented in a convenient and flexible format, 100% online and compatible with any device that has an Internet connection.
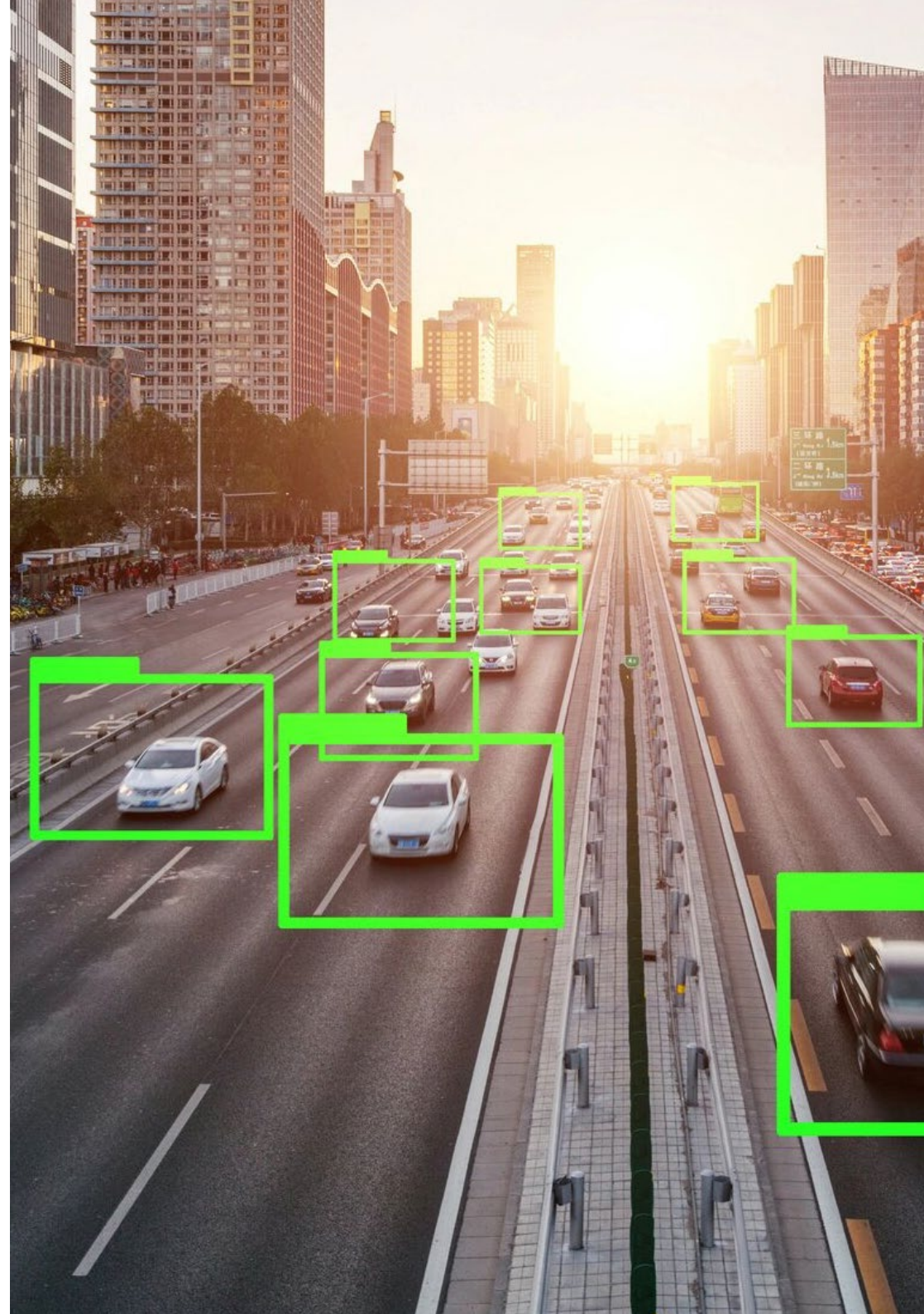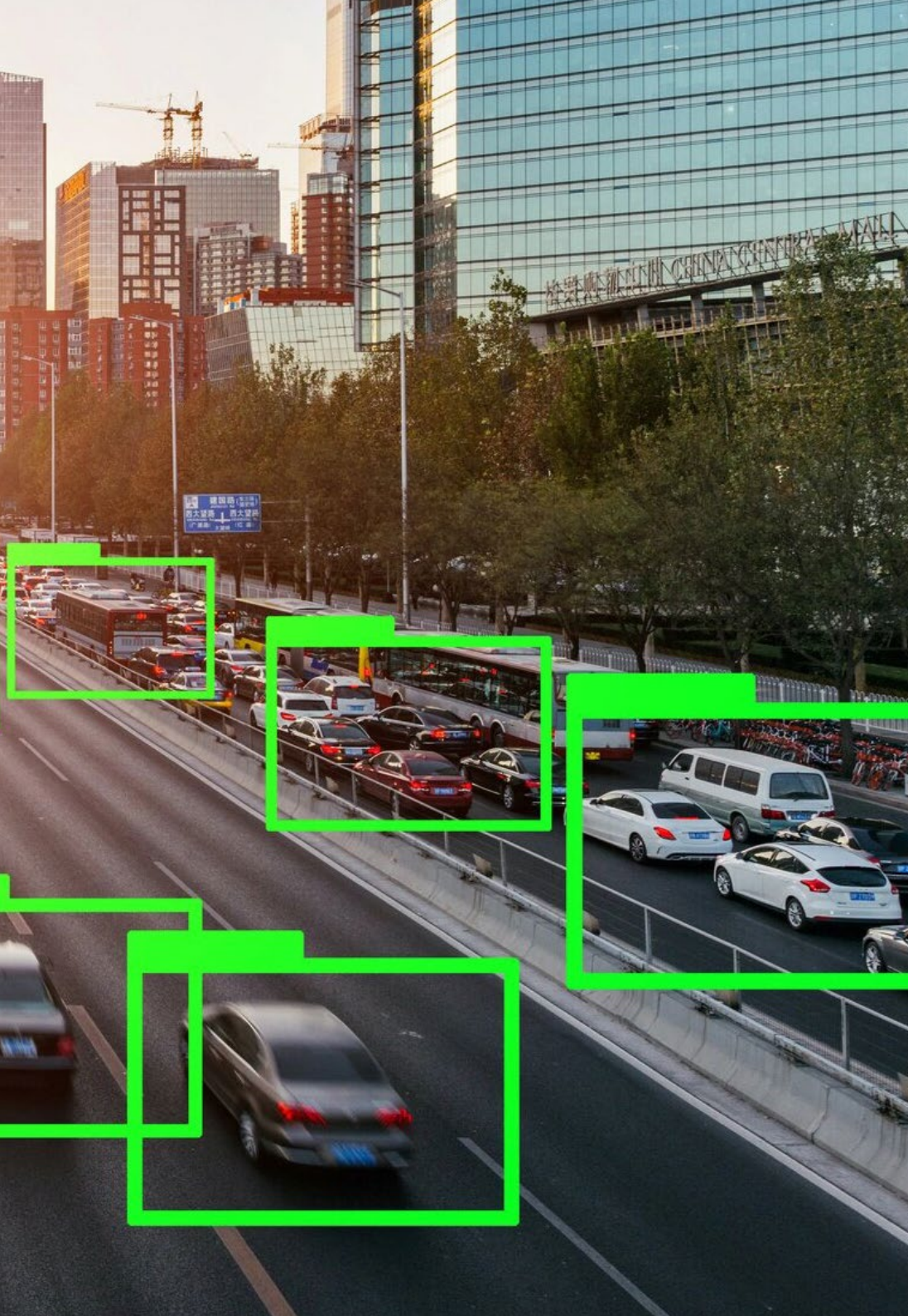
You will be able to download all the content directly to the electronic device of your choice, so you will be able to consult it even without an Internet connection, whenever and wherever it suits you best"

Module 1. Natural Language Processing (NLP) with Recurrent Neural Networks (RNN) and Attention

1.1. Text Generation using RNN
    1.1.1. Training an RNN for Text Generation
    1.1.2. Natural Language Generation with RNN
    1.1.3. Text Generation Applications with RNN

1.2. Creation of the Training Dataset
    1.2.1. Preparation of the Data for RNN Training
    1.2.2. Storage of the Training Dataset
    1.2.3. Data Cleaning and Transformation

1.3. Sentiment Analysis
    1.3.1. Classification of Opinions with RNN
    1.3.2. Detection of Topics in Comments
    1.3.3. Sentiment Analysis with Deep Learning Algorithms

1.4. Encoder-Decoder Network for Neural Machine Translation
    1.4.1. Training a RNN for Machine Translation
    1.4.2. Use of an Encoder-Decoder Network for Machine Translation
    1.4.3. Improving the Accuracy of Machine Translation with a RNN

1.5. Attention Mechanisms
    1.5.1. Application of Attention Mechanisms in RNN
    1.5.2. Use of Attention Mechanisms to Improve the Accuracy of the Models
    1.5.3. Advantages of Attention Mechanisms in Neural Networks

1.6. Transformer Models
    1.6.1. Use of Transformers Models for Natural Language Processing
    1.6.2. Application of Transformers Models for Vision
    1.6.3. Advantages of Transformers Models

1.7. Transformers for Vision
    1.7.1. Use of Transformers Models for Vision
    1.7.2. Image Data Pre-Processing
    1.7.3. Transformer Model Training for Vision

A university qualification developed by renowned experts with the objective of acquiring advanced skills in Natural Language Processing NLP with RNN"

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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 is the most widely used learning system in the best faculties in the world. 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 program, the studies 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 8 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.

01 learning from evidence

02 relearning from evidence

03 testing

04 learning from an expert

05 neurocognitive context dependent learning

06 Von-Restorff effect

07 case based learning through storytelling

08 competencies testing (retesting)

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.

30%

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.

10%

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.

8%

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.

20%

25%

4%

3%

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.

Certificate

The Postgraduate Certificate in NLP Natural Language Processing with RNN guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Global University.

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

This program will allow you to obtain your **Postgraduate Certificate in NLP Natural Language Processing with RNN** endorsed by TECH Global University, the world's largest online university.

TECH Global University is an official European University publicly recognized by the Government of Andorra (*official bulletin*). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Certificate in NLP Natural Language Processing with RNN**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**

tech global university

Mr./Ms. _____, with identification document _____
has successfully passed and obtained the title of:

Postgraduate Certificate in NLP Natural Language Processing with RNN

This is a program of 180 hours of duration equivalent to 6 ECTS, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH Global University is a university officially recognized by the Government of Andorra on the 31st of January of 2024, which belongs to the European Higher Education Area (EHEA).

In Andorra la Vella, on the 28th of February of 2024

Dr. Pedro Navarro Illana
Rector

This qualification must always be accompanied by the university degree issued by the competent authority to practice professionally in each country.   Unique TECH Code: AFWORD23S   techtitute.com/certificates

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

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