Postgraduate Certificate
Artificial Intelligence for Financial Risk Management with TensorFlow and Scikit-learn

tech global university

Postgraduate Certificate
Artificial Intelligence for Financial Risk Management with TensorFlow and Scikit-learn

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

Website: **www.techtitute.com/us/artificial-intelligence/postgraduate-certificate/artificial-intelligence-financial-risk-management-tensorflow-scikit-learn**

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01
Introduction

Financial Risk Management has evolved significantly over the last few years thanks to the advancement of Artificial Intelligence, enabling more accurate and real-time analysis of large volumes of data. For example, tools such as TensorFlow and Scikit-learn offer experts robust solutions for credit risk assessment, market fluctuation prediction or fraud detection. In this scenario, professionals need to have a comprehensive knowledge on the implementation of Machine Learning models for Risk Management to optimize strategic decision making. For this reason, TECH creates a pioneering 100% online university program focused on Artificial Intelligence for Financial Risk Management with TensorFlow and Scikit-learn.

Through this Postgraduate Certificate, based on Relearning, you will manage TensorFlow and Scikit-learn to identify Financial Risks such as default on payments"

According to a new report prepared by the International Monetary Fund, financial institutions face increasing challenges in risk management due to market volatility and the complexity of financial products. Faced with this situation, the use of Artificial Intelligence has become a key solution to improve risk prediction and mitigation capabilities. In this sense, professionals need to skillfully handle tools such as TensorFlow and Scikit-learn to improve Financial Risk Management and fraud detection.

To facilitate this task, TECH presents an innovative Postgraduate Certificate in Artificial Intelligence for Financial Risk Management with TensorFlow and Scikit-learn. The academic itinerary will delve into the most sophisticated Machine Learning techniques to assess credit risks. In line with this, the syllabus will delve into different simulation methods for risk management, including the Monte Carlo technique. Likewise, the program will offer the keys for students to implement continuous risk monitoring systems. Thanks to this, graduates will develop advanced skills to implement Deep Learning algorithms applied to Financial Risk management with TensorFlow and Scikit-learn.

In terms of methodology, the university program is taught 100% online, giving professionals the opportunity to access the content from anywhere and at any time, adapting the study to their schedules. In addition, TECH employs its revolutionary Relearning learning method. This system consists of the repetition of key concepts to fix knowledge and facilitate lasting learning. It should be noted that all students will need is an electronic device with an Internet connection to access the Virtual Campus. They will find a wide range of multimedia support resources such as interactive summaries, explanatory videos or case studies. In this way, graduates will enjoy a dynamic and enjoyable learning experience.

This **Postgraduate Certificate in Artificial Intelligence for Financial Risk Management with TensorFlow and Scikit-learn** contains the most complete and up-to-date scientific program on the market. The most important features include:

- The graphic, schematic, and practical contents with which they are created, provide practical information on the disciplines that are essential for professional practice
- Development of practical cases presented by experts in Artificial Intelligence
- Practical exercises where self-assessment can be used to improve learning
- Its special emphasis on innovative methodologies
- Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- Content that is accessible from any fixed or portable device with an Internet connection

This study plan allows you to exercise in simulated environments, which provide immersive learning programmed to train for real situations"

"You will be able to complete the university program 100% online, adapting it to your needs and making it easier for you to complete it while you carry out your full-time professional activity"

Are you looking to develop effective solutions based on Artificial Intelligence models that optimize the identification of Financial Risks? Achieve it with this program in only 6 weeks.

You will delve into the most sophisticated tools for the optimization of financial portfolios.
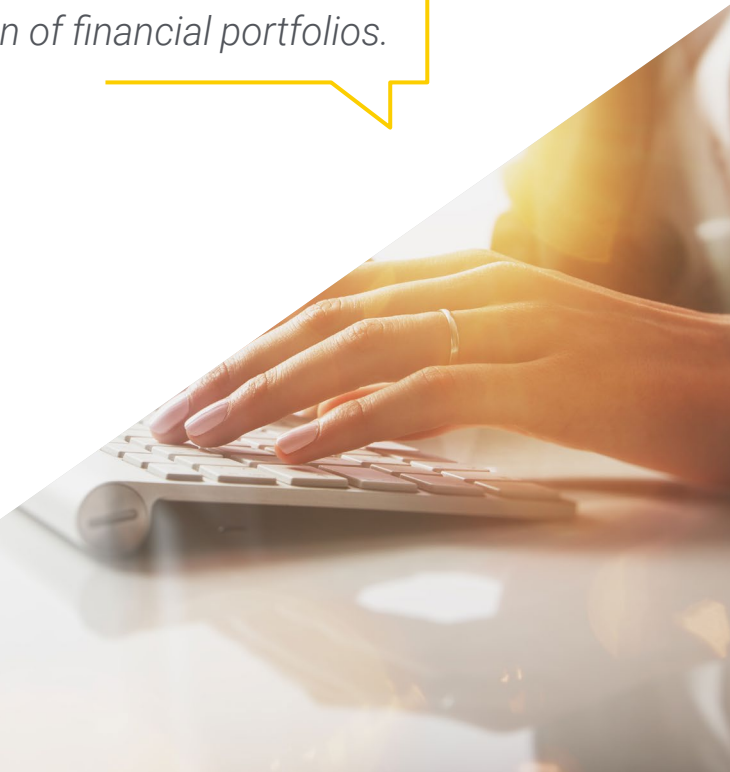
The program's teaching staff includes professionals from the field who contribute their work experience to this educational program, as well as renowned specialists from leading societies and prestigious universities.

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 provide immersive education programmed to learn in real situations.

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

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Objectives

Through this Postgraduate Certificate, professionals will develop advanced skills to implement Intelligence models using TensorFlow and Scikit-learn for the identification, analysis and mitigation of various Financial Risks. In this sense, students will build predictive models that make it possible to foresee the probability of default and fluctuations in the prices of financial assets using Machine Learning algorithms. Also, graduates will train Machine Learning models for the detection of fraudulent activities in financial transactions.

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"You will use Artificial Intelligence to analyze large financial volumes and extract insights that support strategic decision making, improving the management of investment portfolios"

General Objectives

- Apply Artificial Intelligence techniques in financial decision making
- Develop predictive models for financial risk management
- Optimize the allocation of financial resources using AI algorithms
- Automate routine financial processes using machine learning
- Implement natural language processing tools for the analysis of financial data
- Design recommender systems for the financial sector
- Analyze large volumes of financial data using Big Data techniques
- Evaluate the impact of Artificial Intelligence on companies' profitability
- Improve financial fraud detection with the use of AI
- Create financial asset valuation models using Artificial Intelligence
- Develop financial simulation tools based on AI algorithms
- Apply data mining techniques to identify financial patterns
- Develop optimization models for financial planning
- Use neural networks to improve prediction of market trends
- Develop AI-based solutions for financial product personalization
- Implement AI systems for automated investment decisions
- Develop analytical capabilities for interpreting the results of financial AI models
- Investigate the use of Artificial Intelligence in financial regulation and compliance
- Develop AI solutions to reduce costs in financial processes
- Identify opportunities for innovation in the financial sector through AI

Specific Objectives

- Implement state-of-the-art credit, market and liquidity risk models using Machine Learning

- Carry out simulation techniques to assess and manage the impact of financial risks in different scenarios

You will enjoy a virtual library full of multimedia resources in different audiovisual formats such as explanatory videos, interactive summaries or specialized readings"

03

Course Management

In its commitment to provide the most complete and updated university programs in the academic panorama, TECH carries out a meticulous process to form its teaching staff. Thanks to this effort, this Postgraduate Certificate has the collaboration of leading experts in Artificial Intelligence for Financial Risk Management with TensorFlow and Scikit-learn. Therefore, they have developed a variety of teaching materials that stand out both for their high quality and for adapting to the requirements of today's labor market. In this way, students will embark on an immersive experience that will broaden their professional horizons significantly.

"

You will have access to a study plan designed by a renowned teaching team specialized in Artificial Intelligence, which will guarantee you a successful learning experience"

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
- Master in Executive MBA from 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

Professors

Dr. Carrasco Aguilar, Álvaro

- Sales & Marketing Coordinator at LionLingo
- Researcher in Information Technology Management
- PhD in Social and Health Research: Technical and Economic Evaluation of Technologies, Interventions and Policies Applied to Health Improvement from the University of Castilla La Mancha
- Master's Degree in Social and Health Research from the University of Castilla - La Mancha
- Degree in Political Science and Administration at the University of Granada
- Award for "Best Scientific Article for Technological Innovation for the Efficiency of Health Expenditure"
- Regular speaker at international scientific congresses

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Structure and Content

The study plan will delve into the most sophisticated Machine Learning techniques for credit risk assessment, which will allow students to more accurately predict the probability of default of a credit applicant. Along the same lines, the syllabus will delve into Monte Carlo simulations so that graduates can model the uncertainty of financial variables (such as interest rates, asset prices or inflation) in multiple possible scenarios. In addition, the teaching materials will provide experts with state-of-the-art techniques for evaluating and presenting project results.

You will build predictive models to forecast the probability of fluctuations in financial asset prices using Machine Learning algorithms"

Module 1. Artificial Intelligence for Financial Risk Management with TensorFlow and Scikit-learn

1.1.   Fundamentals of Financial Risk Management

    1.1.1.   Risk Management Basics

    1.1.2.   Types of Financial Risks

    1.1.3.   Importance of Risk Management in Finance

1.2.   Credit Risk Models with AI

    1.2.1.   Machine Learning Techniques for Credit Risk Assessment

    1.2.2.   Credit Scoring Models (Scikit-Learn)

    1.2.3.   Implementation of Credit Risk Models with Python

1.3.   Market Risk Models with AI

    1.3.1.   Market Risk Analysis and Management

    1.3.2.   Application of Predictive Market Risk Models

    1.3.3.   Implementation of Market Risk Models

1.4.   Operational Risk and its Management with AI

    1.4.1.   Concepts and Types of Operational Risk

    1.4.2.   Application of AI Techniques for Operational Risk Management

    1.4.3.   Tools and Practical Examples

1.5.   Liquidity Risk Models with AI

    1.5.1.   Fundamentals of Liquidity Risk

    1.5.2.   Machine Learning Techniques for Liquidity Risk Analysis

    1.5.3.   Practical Implementation of Liquidity Risk Models

1.6.   Systemic Risk Analysis with AI

    1.6.1.   Systemic Risk Concepts

    1.6.2.   Applications of AI in the Evaluation of Systemic Risk

    1.6.3.   Case Studies and Practical Examples

1.7.   Portfolio Optimization with Risk Considerations

    1.7.1.   Portfolio Optimization Techniques

    1.7.2.   Incorporation of Risk Measures in Optimization

    1.7.3.   Portfolio Optimization Tools

The implementation of Artificial Intelligence for Financial Risk Management with TensorFlow and Scikit-lean has a growing future. This program will prepare you to overcome the challenges you face in this field. Enroll now!"

05
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.
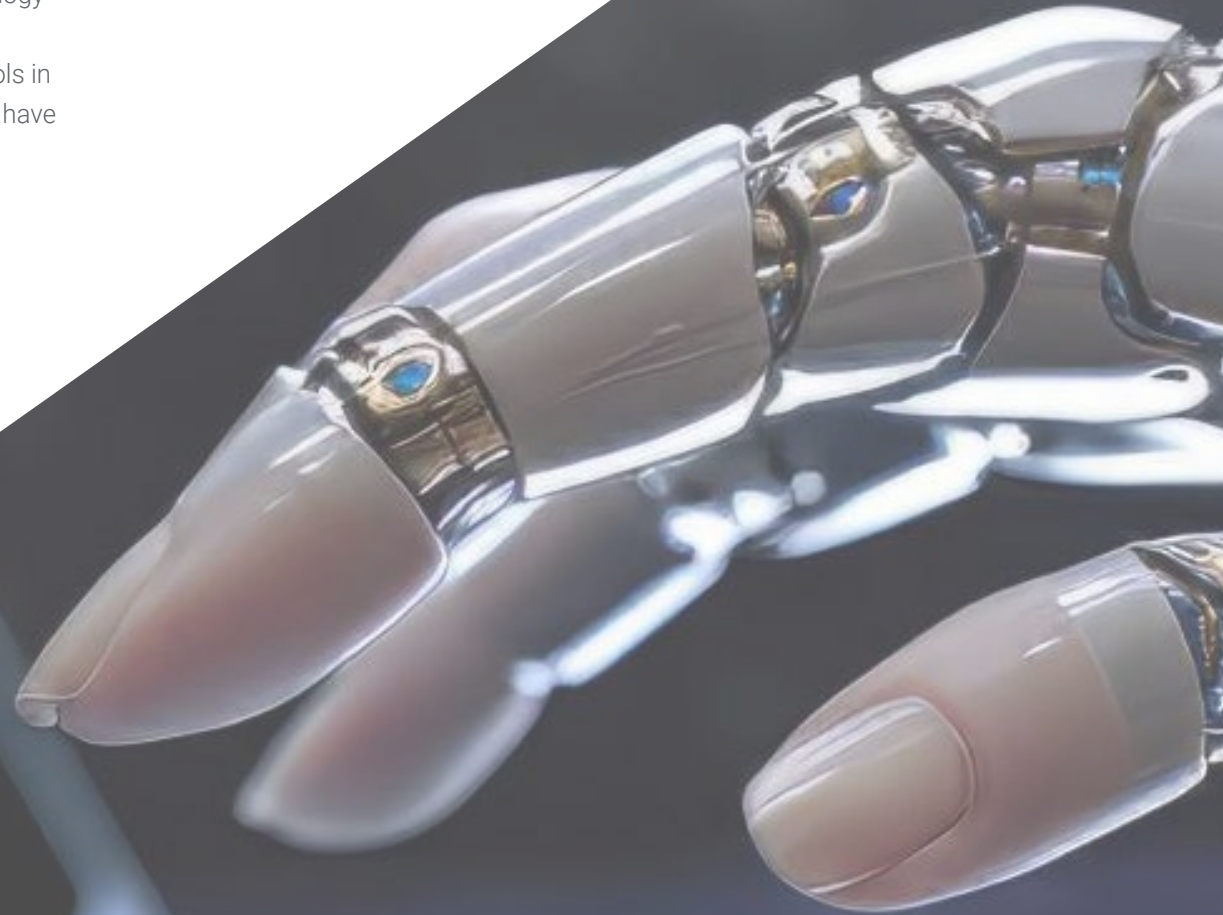
Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"

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.

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.

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.

30%

10%

8%

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 Artificial Intelligence for Financial Risk Management with TensorFlow and Scikit-learn guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Diploma issued by TECH Global University.

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

This private qualification will allow you to obtain a **Postgraduate Certificate in Artificial Intelligence for Financial Risk Management with TensorFlow and Scikit-learn** 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** private qualification 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 Artificial Intelligence for Financial Risk Management with TensorFlow and Scikit-learn**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**

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

Postgraduate Certificate in Artificial Intelligence for Financial Risk Management with TensorFlow and Scikit-lear

This is a private qualification 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
Dean

Unique TECH Code: AFWORD23S   techtitute.com/certificates

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*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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