

Internship Program

Artificial Intelligence in Programming



Internship Program
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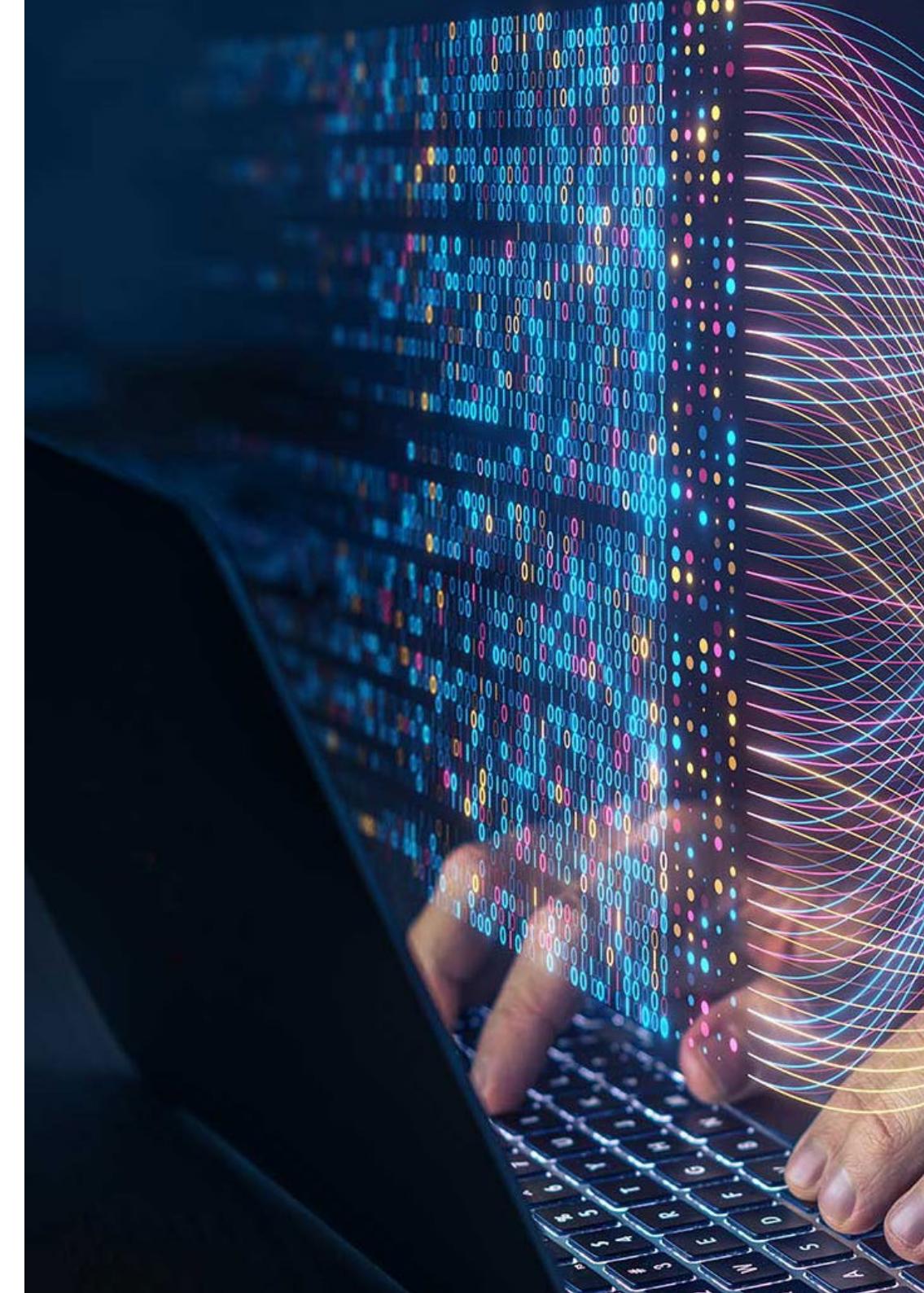
01

Introduction

Companies like OpenAI have launched advanced AI models, such as GPT-4, that enable developers to generate and debug code more efficiently. Tools like GitHub Copilot, powered by AI, assist programmers by suggesting lines of code and solutions in real time, significantly reducing development time and minimizing errors. With these advances, AI transforms Programming into efficiency and precision, and opens up new possibilities for technological innovation and the development of more sophisticated applications. For this reason, TECH has launched this program in which, for 3 weeks, graduates will join a leading company in the field of Artificial Intelligence in Programming, to update themselves with recent advances in this field.

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With this Internship Program, you will gain hands-on experience in the use of advanced Artificial Intelligence tools, improving your skills to develop more efficient and effective code”



Artificial Intelligence (AI) has revolutionized the field of programming, with tools such as GitHub Copilot and ChatGPT making it easier to create code. These technologies use advanced language models to assist programmers by suggesting lines of code, detecting errors and providing efficient solutions in real time. Therefore, the adoption of AI in programming not only increases productivity, but also democratizes access to coding, allowing developers to improve their skills and accelerate software development.

Therefore, during 3 weeks, the graduate will become part of a team of specialists of the highest level, with whom they will actively work on real software development projects, using Artificial Intelligence. In this way, they will be able not only to get up to date with the most effective techniques, but also to implement the necessary skills to excel in this field. As a result, you will participate in a program that will elevate your computing talent to the highest level.

During your stay you will be supported by an assistant tutor, who will ensure that the requirements for which this Internship Program was designed are met. Therefore, the specialist will work with total guarantee and security in the handling of the most innovative technology, as well as in the use of the tools and procedures with the best results to date.

02

Why Study an Internship Program?

This Internship Program will provide computer scientists with a competitive advantage by allowing them to work with cutting-edge technologies and tools in real projects, which will significantly improve their practical and theoretical skills. As such, direct experience in the implementation of AI in software development will prepare professionals to face complex challenges, promoting a deep understanding of machine learning algorithms and models. In addition, keeping up to date with advances in AI will be crucial for any programmer who wants to stay relevant and competitive in a dynamic and rapidly evolving job market.

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In a constantly evolving market, having hands-on AI experience will provide you with a crucial advantage, so that you can contribute significantly to the development of innovative solutions”

1. Updating from the latest technology available

In this area, machine learning systems and deep neural networks have revolutionized the ability of machines to autonomously process and understand data. Tools such as TensorFlow and PyTorch have democratized the development of complex models, allowing researchers and developers to explore applications in areas such as natural language processing, computer vision and creative content generation.

2. Gaining in-depth knowledge from the experience of top specialists

The large team of professionals that will accompany the specialist throughout the practical period is a first-class and an unprecedented guarantee of updating. With a specifically designated tutor, the computer scientist will be able to work on real projects in a state-of-the-art environment, which will allow them to incorporate the latest Artificial Intelligence Programming procedures and tools into their daily practice.

3. Entering first-class professional environments

TECH carefully selects all available centers for Internship Programs. Thanks to this, the specialist will have guaranteed access to a prestigious technological environment in the area of Artificial Intelligence in Programming. In this way, they will be able to experience the day-to-day of a demanding, rigorous and exhaustive area of work, always applying the most innovative technological advances.

4. Combining the best theory with state-of-the-art practice

The academic market is plagued by teaching programs that are poorly adapted to the daily work of the specialist and that require long teaching hours, often not very compatible with personal and professional life. TECH offers a new learning model, 100% practical, that allows you to get in front of state-of-the-art procedures in the field of Artificial Intelligence in Programming and, best of all, to put it into professional practice in just 3 weeks.

5. Opening the door to new opportunities

With the ability to develop advanced machine-learning algorithms and intelligent systems, computer scientists can influence industries as diverse as healthcare, e-commerce, automotive and more. These technologies not only optimize existing processes, but also enable the creation of innovative products and services that improve quality of life and business efficiency.

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*You will have full practical immersion
at the center of your choice"*

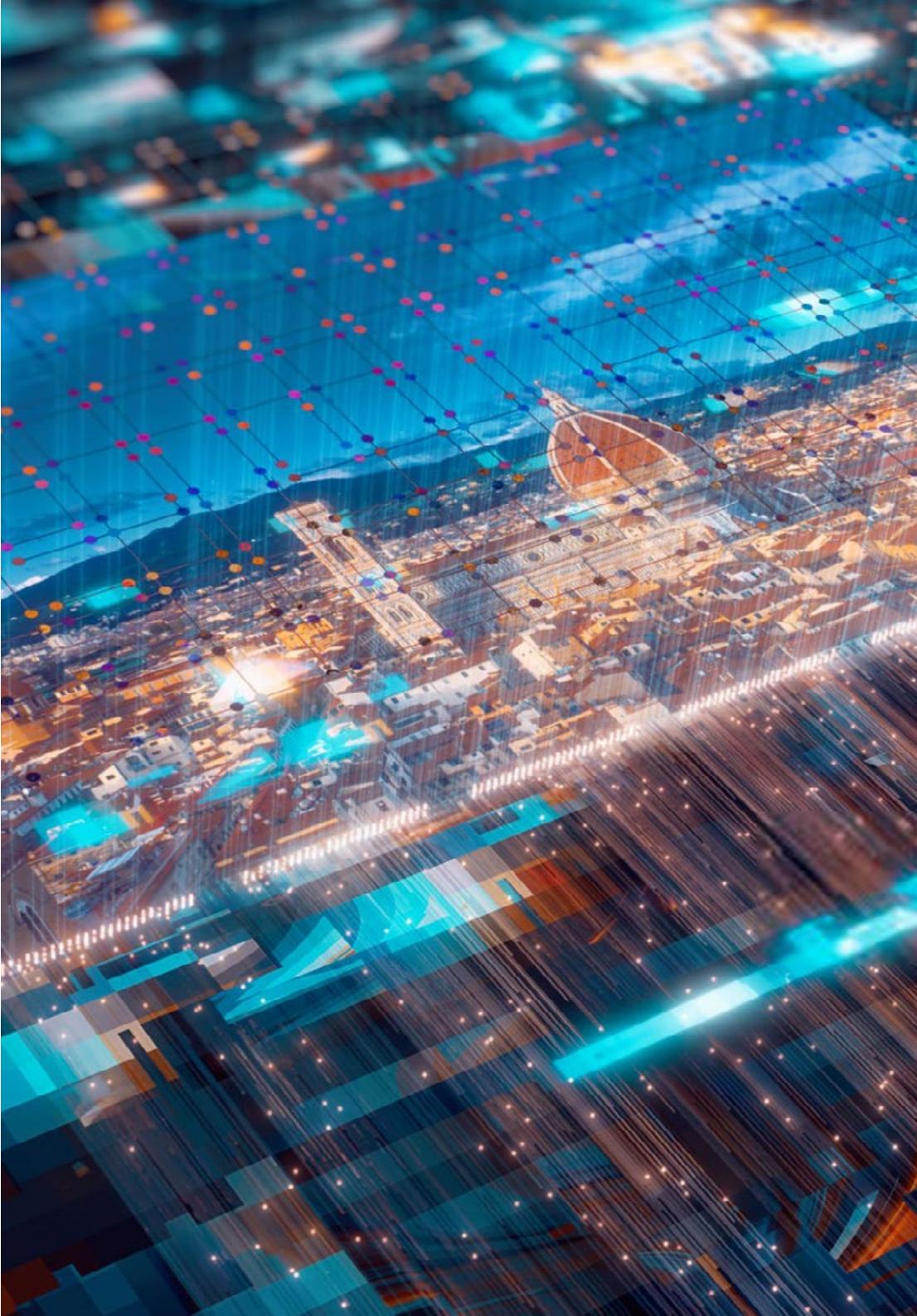
03 Objectives

The objectives of the program will equip computer scientists with solid technical skills in advanced AI tools, enabling them to apply machine learning and natural language processing principles when creating intelligent software. In addition, it will deepen theoretical and practical understanding of AI algorithms and models, preparing professionals to tackle complex challenges in developing innovative solutions. Another key objective will be to foster interdisciplinary collaboration and team-based problem solving, reflecting the dynamics of today's work environment, in which the integration of emerging technologies such as AI is critical.



General Objectives

- Master the theoretical foundations of Artificial Intelligence
- Apply machine learning algorithms in practical projects
- Implement natural language processing (NLP) techniques in software applications
- Optimize AI models to improve code accuracy and efficiency
- Solve complex problems using advanced AI tools
- Integrate AI systems into the software development cycle effectively
- Improve the ability to make data-driven decisions through AI
- Develop skills in manipulating and analyzing large volumes of data
- Collaborate in multidisciplinary teams for AI and programming projects
- Continuously adapt skills and knowledge to the latest innovations in AI





Specific Objectives

- ◆ Master the fundamental concepts of Artificial Intelligence and machine learning
- ◆ Familiarize with popular libraries and frameworks such as TensorFlow and PyTorch
- ◆ Implement and train supervised learning models such as linear regression, decision trees and neural networks
- ◆ Apply unsupervised learning techniques such as clustering and dimensionality reduction
- ◆ Use natural language processing (NLP) techniques to analyze and process text
- ◆ Develop skills in data preprocessing to improve the quality and efficiency of AI models
- ◆ Experiment with hyperparameter optimization techniques to improve model performance
- ◆ Evaluate and compare different AI models using appropriate metrics such as accuracy, recall and F1-score
- ◆ Apply cross-validation and dataset separation techniques to ensure generalization of models
- ◆ Use visualization tools to interpret results and understand model behavior
- ◆ Integrate AI models in practical applications such as recommender systems, chatbots or predictive analytics

- ◆ Implement Deep Learning models for complex tasks such as image recognition or speech processing
- ◆ Collaborate in multidisciplinary teams to develop AI solutions that address real-world problems
- ◆ Perform extensive testing and debugging of AI models to ensure their robustness and reliability
- ◆ Properly document the model development process, including data selection, model design, and results evaluation
- ◆ Optimize code for efficient deployment of AI models in production environments
- ◆ Follow ethical and legal practices in collecting, storing, and processing data for AI models
- ◆ Keep up to date with the latest research and developments in the field of Artificial Intelligence
- ◆ Acquire skills in effectively communicating the results and applications of AI models to different audiences
- ◆ Develop a research and creative mindset to explore new techniques and applications of artificial intelligence in programming

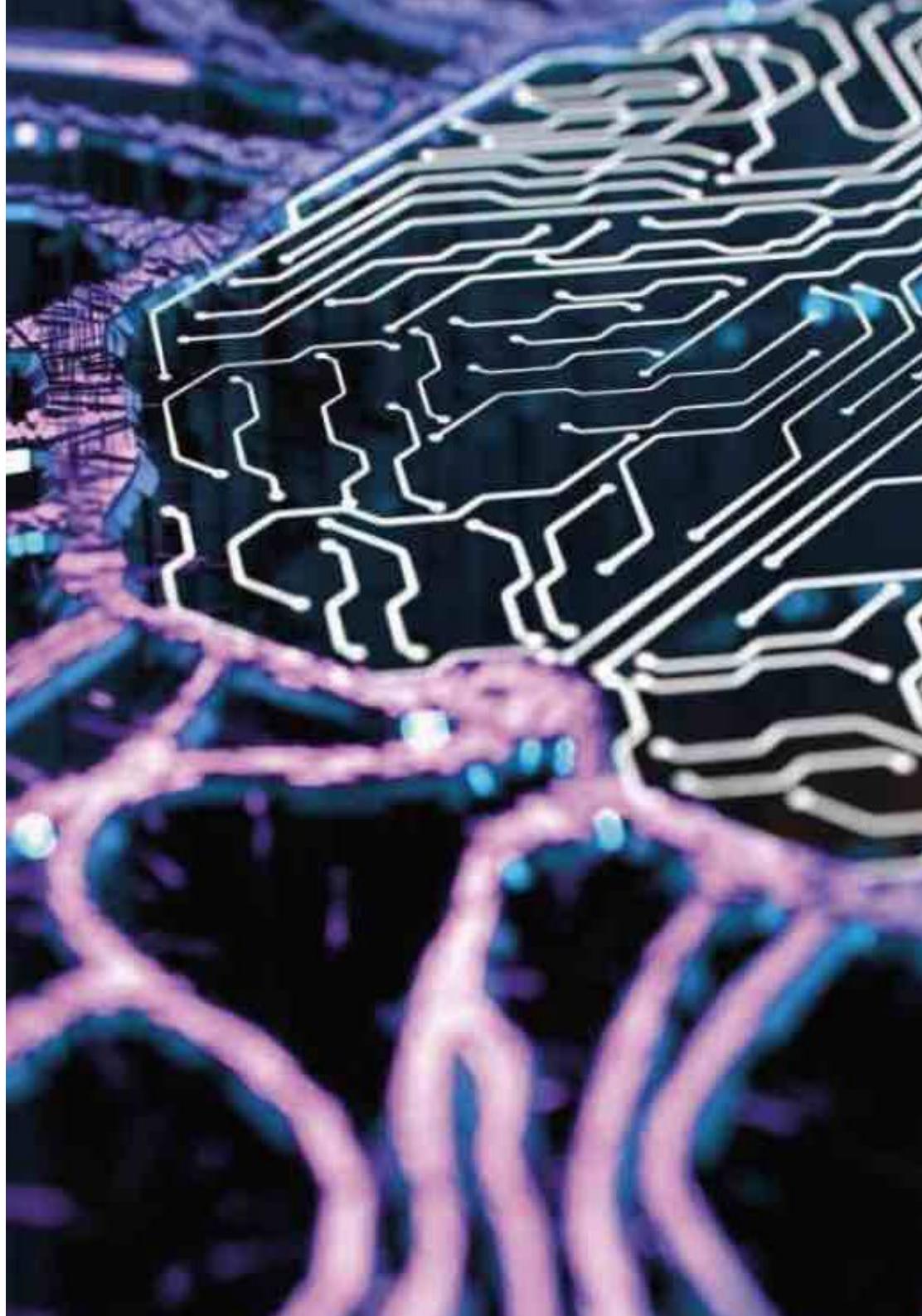
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Educational Plan

The Internship Program's Internship Program in Artificial Intelligence in Programming consists of a practical internship in a prestigious company, lasting 3 weeks, from Monday to Friday, with 8 consecutive hours of practical training with an assistant specialist. This internship will allow the computer scientist to develop real AI projects, alongside a team of experts of reference in this field, applying the most innovative procedures and tools, implementing the latest technology.

In this training proposal, of a completely practical nature, the activities are aimed at developing and perfecting the skills necessary for the provision of computer services based on Artificial Intelligence, and are oriented towards specific training for the exercise of the activity. This is undoubtedly a unique opportunity to learn by working.

The practical teaching will be carried out with the active participation of the student performing the activities and procedures of each area of competence (learning to learn and learning to do), with the accompaniment and guidance of teachers and other training partners that facilitate teamwork and multidisciplinary integration as cross-cutting skills for the practice of Artificial Intelligence in Programming (learning to be and learning to relate).



The procedures described below will be the basis of the practical part of the program, and their implementation will be subject to the center's own availability and workload, the proposed activities being the following:

Module	Practical Activity
Development of Machine Learning Models	Train neural network models
	Optimize machine learning algorithms
	Implement regularization and optimization techniques
	Evaluate and compare the accuracy of different models
Natural Language Processing (NLP)	Develop algorithms for sentiment analysis
	Create Named Entity Recognition (NER) systems
	Implement machine translation models
	Design spam filters using PLN techniques
Computer Vision	Develop algorithms for face recognition
	Implement object detection systems in images
	Optimize image segmentation algorithms
	Evaluate accuracy of computer vision models
Recommendation Systems	Implement collaborative filtering-based recommendation engines
	Develop hybrid recommender systems
	Optimize real-time recommendation algorithms
	Evaluate the effectiveness of recommender systems using appropriate metrics

Module	Practical Activity
Practical Applications of AI	Develop chatbots using natural language processing techniques
	Implement speech recognition systems for mobile applications
	Design predictive analytics models for business
	Create automatic content generation systems
Ethics and Security in AI	Assess bias in machine learning models
	Implement privacy techniques in AI algorithms
	Develop ethics policies in the deployment of AI systems
	Audit AI systems to identify vulnerabilities and risks
Research and Development	Research new deep learning techniques
	Develop prototypes of innovative systems using AI
	Publish papers in conferences and journals
	Collaborate with multidisciplinary teams on applied research projects

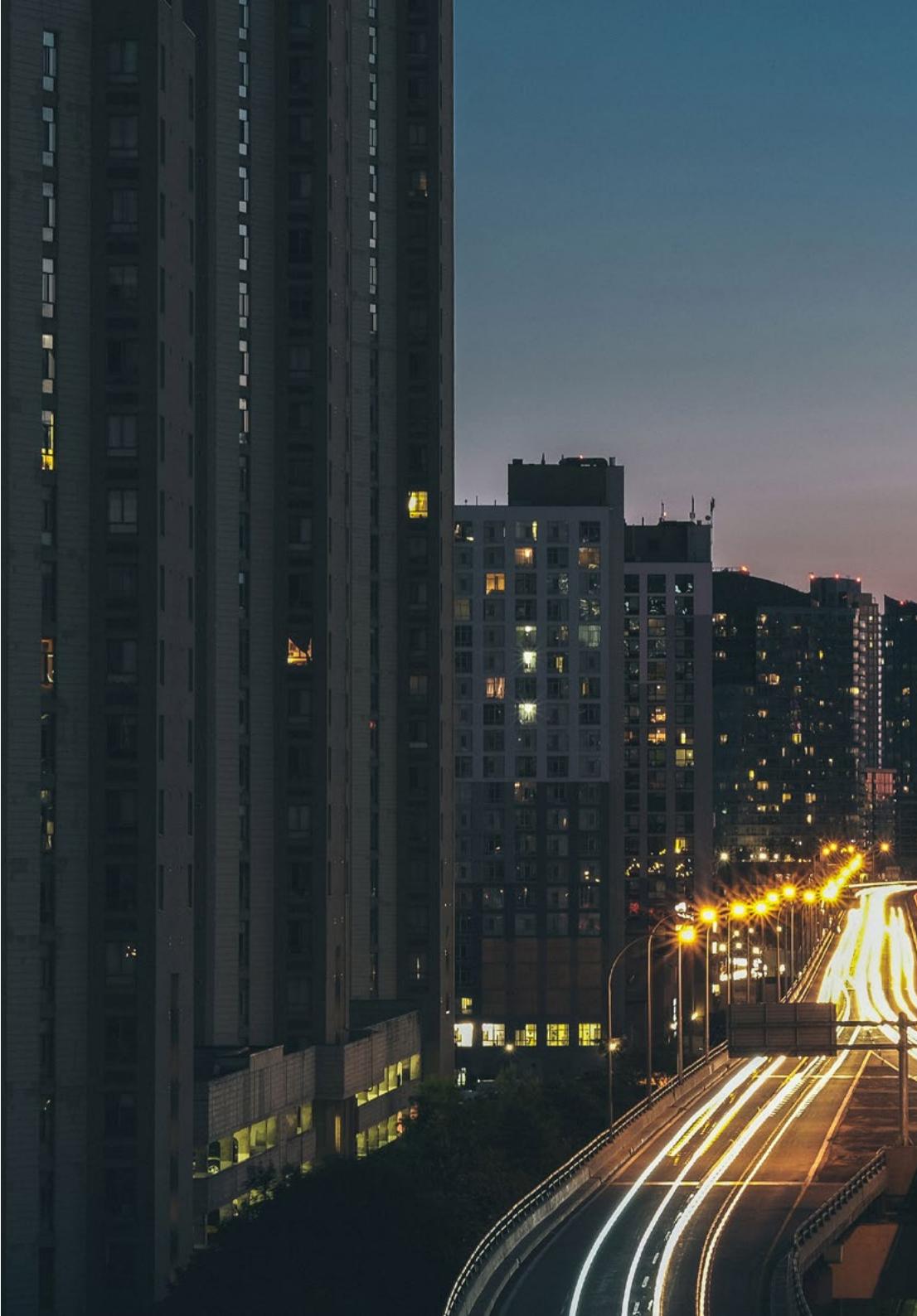
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Where Can I Do the Internship Program?

In its maxim of offering quality education within the reach of most people, TECH has decided to broaden the academic horizons so that this training can be given in various institutions around the country. This is a unique opportunity that will allow IT professionals to continue to grow their careers alongside the best specialists in the sector in various leading companies.

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Take your Internship Program in a prestigious IT company and put into action everything you have learned from the hand of the best professionals in the sector”





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The student will be able to do this program at the following centers:



Captia Ingeniería

Country
Spain

City
Madrid

Address: Av. de las Nieves, 37, Bloque A Planta 1
Oficina E, 28935, Móstoles, Madrid

IT company dedicated to providing advanced technological
solutions to industries.

Related internship programs:

- Visual Analytics and Big Data
- Software Development

06

General Conditions

Civil Liability Insurance

This institution's main concern is to guarantee the safety of the students and other collaborating agents involved in the internship process at the company. Among the measures dedicated to achieve this is the response to any incident that may occur during the entire teaching-learning process.

To this end, this entity commits to purchasing a civil liability insurance policy to cover any eventuality that may arise during the course of the internship at the center.

This liability policy for interns will have broad coverage and will be taken out prior to the start of the practical training period. That way professionals will not have to worry in case of having to face an unexpected situation and will be covered until the end of the internship program at the center.



General Conditions of the Internship Program

The general terms and conditions of the internship agreement for the program are as follows:

1. TUTOR: During the Internship Program, students will be assigned with two tutors who will accompany them throughout the process, answering any doubts and questions that may arise. On the one hand, there will be a professional tutor belonging to the internship center who will have the purpose of guiding and supporting the student at all times. On the other hand, they will also be assigned with an academic tutor, whose mission will be to coordinate and help the students during the whole process, solving doubts and facilitating everything they may need. In this way, the student will be accompanied and will be able to discuss any doubts that may arise, both clinical and academic.

2. DURATION: The internship program will have a duration of three continuous weeks, in 8-hour days, 5 days a week. The days of attendance and the schedule will be the responsibility of the center and the professional will be informed well in advance so that they can make the appropriate arrangements.

3. ABSENCE: If the students does not show up on the start date of the Internship Program, they will lose the right to it, without the possibility of reimbursement or change of dates. Absence for more than two days from the internship, without justification or a medical reason, will result in the professional's withdrawal from the internship, therefore, automatic termination of the internship. Any problems that may arise during the course of the internship must be urgently reported to the academic tutor.

4. CERTIFICATION: Professionals who pass the Internship Program will receive a certificate accrediting their stay at the center.

5. EMPLOYMENT RELATIONSHIP: The Internship Program shall not constitute an employment relationship of any kind.

6. PRIOR EDUCATION: Some centers may require a certificate of prior education for the Internship Program. In these cases, it will be necessary to submit it to the TECH internship department so that the assignment of the chosen center can be confirmed.

7. DOES NOT INCLUDE: The Internship Program will not include any element not described in the present conditions. Therefore, it does not include accommodation, transportation to the city where the internship takes place, visas or any other items not listed.

However, students may consult with their academic tutor for any questions or recommendations in this regard. The academic tutor will provide the student with all the necessary information to facilitate the procedures in any case.

07

Certificate

This **Internship Program in Artificial Intelligence in Programming** contains the most complete and up-to-date program on the professional and educational field.

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

In addition to the diploma, students will be able to obtain an academic transcript, as well as a certificate outlining the contents of the program. In order to do so, students should contact their academic advisor, who will provide them with all the necessary information.

Title: **Internship Program in Artificial Intelligence in Programming**

Duration: **3 weeks**

Attendance: **Monday to Friday, 8-hour shifts, consecutive shifts**



tech technological university

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