

Postgraduate Certificate Integration of Speech Recognition Technologies in Machine Interpreting



Postgraduate Certificate Integration of Speech Recognition Technologies in Machine Interpreting

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

Website: www.techtute.com/us/humanities/postgraduate-certificate/integration-speech-recognition-technologies-machine-interpreting

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01

Introduction

The integration of speech recognition technologies in automatic interpretation has revolutionized the way we interact in multilingual environments. Through the use of Artificial Intelligence and deep neural networks, these technologies make it possible to transcribe and translate speech in real time, improving accuracy and efficiency in global communication. From its implementation in video calling platforms and virtual assistants to its use in international conferences and events, speech recognition has facilitated the elimination of language barriers. In this context, TECH has developed a 100% online program that adjusts flexibly to the work and personal commitments of professionals, applying at all times its innovative Relearning learning methodology.





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An innovative and 100% online program with which you will delve into the participation of various speech recognition technologies for automatic interpretation”

Speech recognition technologies have revolutionized automatic interpreting, offering innovative solutions for real-time communication between speakers of different languages, for Humanities specialists. Thanks to advances in Artificial Intelligence and deep neural networks, it is possible to convert speech into text and translate it instantly with increasing accuracy.

The Postgraduate Certificate begins with an introduction to speech recognition technologies and their integration into machine interpreting. The fundamental concepts will be reviewed, from their definition to the evolution of these technologies, highlighting the impact of tools such as Kaldi. The benefits offered by these solutions in the field of interpretation will be addressed, especially in the elimination of language barriers in multilingual and cultural environments.

It will also delve into the technical principles of speech recognition, explaining how the systems work and the algorithms they use, and analyzing the different types of existing systems. Recent advances in accuracy and speed, as well as the ability to adapt to different accents and dialects, will be key to understanding how these technologies are improving the quality of automatic interpretations. Market-leading tools and platforms, such as Speechmatics, will be evaluated through case studies.

The last section of the program will look at how these technologies are integrated into automatic interpreting systems, addressing the design, implementation and adaptation of these systems to various environments. Special attention will be paid to the user experience, highlighting the importance of intuitive and accessible interfaces, and customization according to the user's needs. In addition, ethical and social challenges related to voice recognition, such as privacy, will be discussed.

A 100% online Postgraduate Certificate that gives the professional the ease of being able to study it comfortably, wherever and whenever they want. All they need is a device with Internet access to take their career one step further. It also features the innovative Relearning methodology, which guarantees the accurate retention of information.

This **Postgraduate Certificate in Integration of Speech Recognition Technologies in Machine Interpreting** contains the most complete and up-to-date program on the market. The most important features include:

- ♦ Development of practical cases presented by experts in Humanities in Artificial Intelligence
- ♦ The graphic, schematic and eminently practical contents with which it is conceived gather scientific and practical information on those disciplines that are indispensable for professional practice
- ♦ 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



Address new applications of speech recognition technology and expand your ability to address complex interpreting challenges through a variety of multimedia resources”

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Join this program and delve into the fundamentals of how speech recognition works and the different types that exist, through intelligent algorithms”

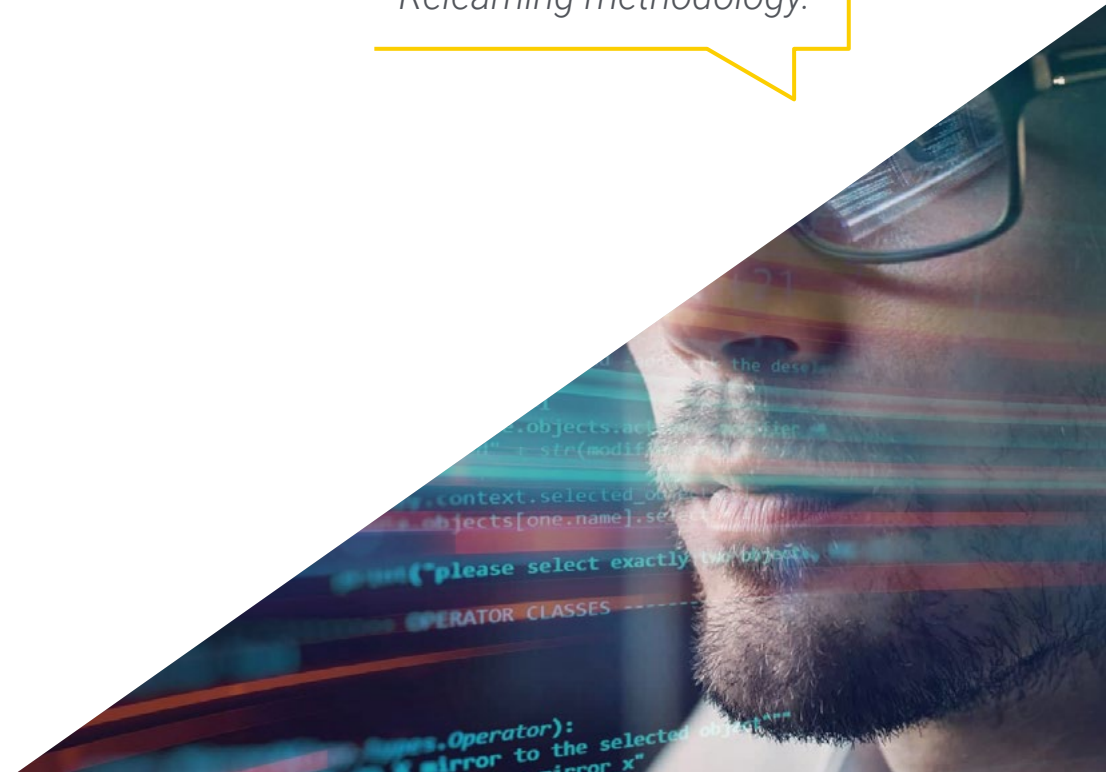
The program's teaching staff includes professionals from the field who contribute their work experience to this educational program, as well as renowned specialists from leading societies and prestigious universities.

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 experts in the field of educational coaching with extensive experience.

Learn more about the accessibility of interpreting services, supported by complementary readings and other teaching tools from TECH's comprehensive Virtual Campus.

It includes the optimization of the user experience in automatic interpreting with voice recognition, through the innovative Relearning methodology.



02 Objectives

The main objective of the Postgraduate Certificate is to prepare Humanities professionals in the implementation and improvement of advanced technologies that increase the quality and accessibility of automatic interpretation systems. Technical skills will be developed to effectively integrate speech recognition into various platforms such as Speech Recognition, ensuring a smooth and efficient user experience. In addition, the understanding of the particular needs of users and how these technologies can be adjusted to meet those demands, promoting inclusion and effective communication in different environments will be promoted.





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*Take advantage of the tools that
TECH has to improve the processes
carried out for voice recognition”*



General Objectives

- ◆ Learn how to integrate speech recognition technologies into machine interpreting systems, improving accessibility and efficiency
- ◆ Develop criteria and methods for assessing the quality of translations and interpretations performed with AI tools
- ◆ Integrate AI tools and platforms into the workflow of translators and interpreters, optimizing productivity and consistency
- ◆ Train in identifying and resolving ethical and social challenges related to the use of Artificial Intelligence in translation and interpreting
- ◆ Explore and implement innovations in the field of AI-assisted translation and interpretation, anticipating emerging trends
- ◆ Equip yourself with the necessary skills to lead projects and teams in the implementation of AI solutions in the field of translation and interpreting





Specific Objectives

- ♦ Develop skills to integrate speech recognition technologies into machine interpreting systems, improving the accessibility and quality of interpretations
- ♦ Learn how to improve the user experience in automatic interpreting systems through the optimization of speech recognition technologies



Enhance your skills to lead teams in the future in the field of implementing Artificial Intelligence solutions for machine translation and interpreting”

03

Course Management

The faculty of this program are highly qualified professionals with an excellent academic background and vast experience in the field of speech recognition and automatic interpretation. With an interdisciplinary approach, these instructors combine knowledge in Linguistics and Artificial Intelligence, providing a complete and deep vision on the subject. In addition, they have been actively involved in research and development projects, giving them an up-to-date understanding of the latest trends and developments in the field. With their help, the strengthening of skills in speech recognition platforms and tools in automatic interpretation.



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The excellence of this teaching staff is reflected in the different topics of the curriculum: from the algorithms used by AI, to the linguistic verification of different accents and dialects in interpretations”

Management



Dr. Peralta Martín-Palomino, Arturo

- ♦ CEO and CTO at Prometheus Global Solutions
- ♦ CTO at Korporate Technologies
- ♦ CTO at AI Shepherds 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's Degree in Executive MBA from the Isabel I University
- ♦ 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 the research group SMILE.

Professors

Ms. Martínez Cerrato, Yésica

- ♦ Responsible for Technical Training at Securitas Seguridad España
- ♦ Education, Business and Marketing Specialist
- ♦ Product Manager in Electronic Security at Securitas Direct
- ♦ Business Intelligence Analyst at Ricopia Technologies
- ♦ Computer Technician and Responsible for OTEC computer classrooms at the University of Alcalá de Henares
- ♦ Collaborator in the ASALUMA Association
- ♦ Degree in Electronic Communications Engineering at the Polytechnic School, University of Alcalá de Henares

Ms. Del Rey Sánchez, Cristina

- ♦ Talent Management Administrative Officer at Securitas Seguridad España, S.L.
- ♦ Extracurricular Activities Center Coordinator
- ♦ Support classes and pedagogical interventions with Primary and Secondary Education students
- ♦ Postgraduate in Development, Delivery and Tutoring of e-Learning Training Actions
- ♦ Postgraduate in Early Childhood Care
- ♦ Degree in Pedagogy from the Complutense University of Madrid

04

Structure and Content

This academic itinerary covers the most complete agenda in terms of speech recognition by automatic interpretation; from the review of concepts, history and importance of technologies in speech recognition, to the use of Artificial Intelligence such as OTTER.ai, which allows the design of intuitive user interfaces. Likewise, the incorporation of technologies in automatic interpretation platforms will be reviewed in depth, covering topics such as algorithm optimization and adaptation to different languages and contexts. User-centered design will also be discussed, enabling professionals to develop interfaces that enhance interaction and experience.

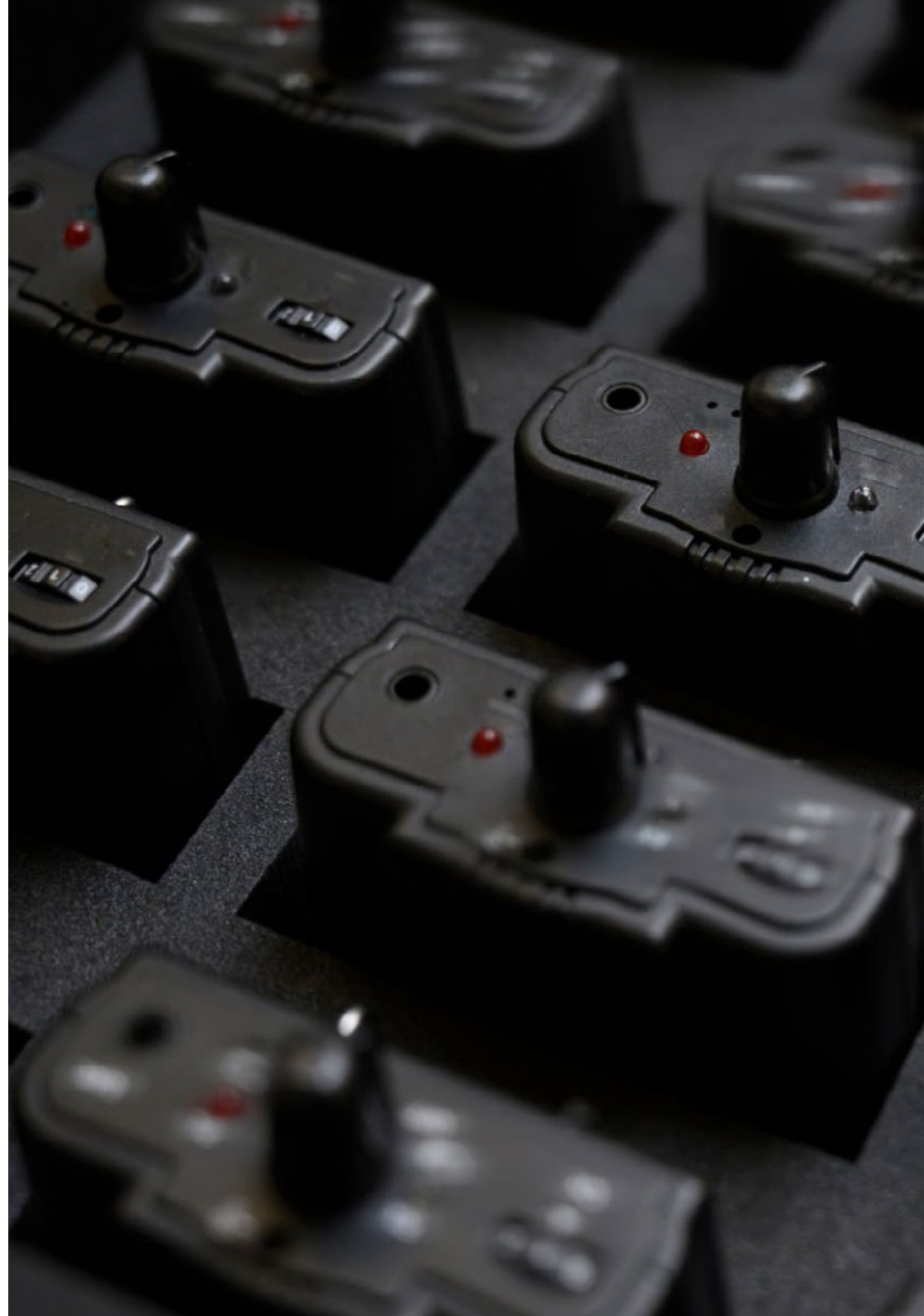


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Master OTTER.ai, an advanced artificial intelligence platform that allows you to create intuitive user interfaces, optimizing interaction and facilitating a more fluid and efficient experience”

Module 1. Integration of Speech Recognition Technologies in Machine Interpreting

- 1.1. Introduction to the Integration of Speech Recognition Technologies in Machine Interpreting
 - 1.1.1. Definition and Basic Concepts
 - 1.1.2. Brief History and Evolution. Kaldi
 - 1.1.3. Importance and Benefits in the Field of Interpretation
- 1.2. Principles of Speech Recognition for Machine Interpreting
 - 1.2.1. How Speech Recognition Works
 - 1.2.2. Technologies and Algorithms Used
 - 1.2.3. Types of Speech Recognition Systems
- 1.3. Development and Improvements in Speech Recognition Technologies
 - 1.3.1. Recent Technological Advances. Speech Recognition
 - 1.3.2. Improvements in Accuracy and Speed
 - 1.3.3. Adaptation to Different Accents and Dialects
- 1.4. Speech Recognition Platforms and Tools for Machine Interpreting
 - 1.4.1. Description of the Main Platforms and Tools Available
 - 1.4.2. Comparison of Functionalities and Features
 - 1.4.3. Use Cases and Practical Examples. Speechmatics
- 1.5. Integrating Speech Recognition Technologies into Machine Interpreting Systems
 - 1.5.1. Design and Implementation of Machine Interpreting Systems with Speech Recognition
 - 1.5.2. Adaptation to Different Interpreting Environments and Situations
 - 1.5.3. Technical and Infrastructure Considerations
- 1.6. Optimization of the User Experience in Machine Interpreting with Speech Recognition
 - 1.6.1. Design of Intuitive and Easy to Use User Interfaces
 - 1.6.2. Customization and Configuration of Preferences. OTTER.ai
 - 1.6.3. Accessibility and Multilingual Support in Machine Interpreting Systems



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- 1.7. Assessment of the Quality in Machine Interpreting with Speech Recognition
 - 1.7.1. Interpretation Quality Assessment Metrics
 - 1.7.2. Machine vs. Human Evaluation
 - 1.7.3. Strategies to Improve the Quality in Machine Interpreting with Speech Recognition
 - 1.8. Ethical and Social Challenges in the Use of Speech Recognition Technologies in Machine Interpreting
 - 1.8.1. Privacy and Security of User Data
 - 1.8.2. Biases and Discrimination in Speech Recognition
 - 1.8.3. Impact on the Interpreting Profession and on Linguistic and Cultural Diversity
 - 1.9. Specific Applications of Machine Interpreting with Speech Recognition
 - 1.9.1. Real-Time Interpreting in Business and Commercial Environments
 - 1.9.2. Remote and Telephonic Interpreting with Speech Recognition
 - 1.9.3. Interpreting at International Events and Conferences
 - 1.10. Future of the Integration of Speech Recognition Technologies in Machine Interpreting
 - 1.10.1. Emerging Trends and Technological Developments. CMU Sphinx
 - 1.10.2. Future Prospects and Potential Innovative Applications
 - 1.10.3. Implications for Global Communication and Elimination of Language Barriers

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Enroll now in this program and address the latest trends in removing language barriers with the use of more disruptive AI technologies”

05

Study Methodology

TECH is the world's first university to combine the **case study** methodology with **Relearning**, a 100% online learning system based on guided repetition.

This disruptive pedagogical strategy has been conceived to offer professionals the opportunity to update their knowledge and develop their skills in an intensive and rigorous way. A learning model that places students at the center of the educational process giving them the leading role, adapting to their needs and leaving aside more conventional methodologies.



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TECH will prepare you to face new challenges in uncertain environments and achieve success in your career”

The student: the priority of all TECH programs

In TECH's study methodology, the student is the main protagonist.

The teaching tools of each program have been selected taking into account the demands of time, availability and academic rigor that, today, not only students demand but also the most competitive positions in the market.

With TECH's asynchronous educational model, it is students who choose the time they dedicate to study, how they decide to establish their routines, and all this from the comfort of the electronic device of their choice. The student will not have to participate in live classes, which in many cases they will not be able to attend. The learning activities will be done when it is convenient for them. They can always decide when and from where they want to study.

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*At TECH you will NOT have live classes
(which you might not be able to attend)”*



The most comprehensive study plans at the international level

TECH is distinguished by offering the most complete academic itineraries on the university scene. This comprehensiveness is achieved through the creation of syllabi that not only cover the essential knowledge, but also the most recent innovations in each area.

By being constantly up to date, these programs allow students to keep up with market changes and acquire the skills most valued by employers. In this way, those who complete their studies at TECH receive a comprehensive education that provides them with a notable competitive advantage to further their careers.

And what's more, they will be able to do so from any device, pc, tablet or smartphone.

“*TECH's model is asynchronous, so it allows you to study with your pc, tablet or your smartphone wherever you want, whenever you want and for as long as you want*”

Case Studies and Case Method

The case method has been the learning system most used by the world's best business schools. Developed in 1912 so that law students would not only learn the law based on theoretical content, its function was also to present them with real complex situations. In this way, they could make informed decisions and value judgments about how to resolve them. In 1924, Harvard adopted it as a standard teaching method.

With this teaching model, it is students themselves who build their professional competence through strategies such as Learning by Doing or Design Thinking, used by other renowned institutions such as Yale or Stanford.

This action-oriented method will be applied throughout the entire academic itinerary that the student undertakes with TECH. Students will be confronted with multiple real-life situations and will have to integrate knowledge, research, discuss and defend their ideas and decisions. All this with the premise of answering the question of how they would act when facing specific events of complexity in their daily work.



Relearning Methodology

At TECH, case studies are enhanced with the best 100% online teaching method: Relearning.

This method breaks with traditional teaching techniques to put the student at the center of the equation, providing the best content in different formats. In this way, it manages to review and reiterate the key concepts of each subject and learn to apply them in a real context.

In the same line, and according to multiple scientific researches, reiteration is the best way to learn. For this reason, TECH offers between 8 and 16 repetitions of each key concept within the same lesson, presented in a different way, with the objective of ensuring that the knowledge is completely consolidated during the study process.

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.



A 100% online Virtual Campus with the best teaching resources

In order to apply its methodology effectively, TECH focuses on providing graduates with teaching materials in different formats: texts, interactive videos, illustrations and knowledge maps, among others. All of them are designed by qualified teachers who focus their work on combining real cases with the resolution of complex situations through simulation, the study of contexts applied to each professional career and learning based on repetition, through audios, presentations, animations, images, etc.

The latest scientific evidence in the field of Neuroscience points to the importance of taking into account the place and context where the content is accessed before starting a new learning process. Being able to adjust these variables in a personalized way helps people to remember and store knowledge in the hippocampus to retain it in the long term. This is a model called Neurocognitive context-dependent e-learning that is consciously applied in this university qualification.

In order to facilitate tutor-student contact as much as possible, you will have a wide range of communication possibilities, both in real time and delayed (internal messaging, telephone answering service, email contact with the technical secretary, chat and videoconferences).

Likewise, this very complete Virtual Campus will allow TECH students to organize their study schedules according to their personal availability or work obligations. In this way, they will have global control of the academic content and teaching tools, based on their fast-paced professional update.



The online study mode of this program will allow you to organize your time and learning pace, adapting it to your schedule”

The effectiveness of the method is justified by four fundamental achievements:

1. Students who follow this method not only achieve the assimilation of concepts, but also a development of their mental capacity, through exercises that assess real situations and the application of knowledge.
2. Learning is solidly translated into practical skills that allow the student to better integrate into the real world.
3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life.
4. Students like to feel that the effort they put into their studies is worthwhile. This then translates into a greater interest in learning and more time dedicated to working on the course.

The university methodology top-rated by its students

The results of this innovative teaching model can be seen in the overall satisfaction levels of TECH graduates.

The students' assessment of the quality of teaching, quality of materials, course structure and objectives is excellent. Not surprisingly, the institution became the best rated university by its students on the Trustpilot review platform, obtaining a 4.9 out of 5.

Access the study contents from any device with an Internet connection (computer, tablet, smartphone) thanks to the fact that TECH is at the forefront of technology and teaching.

You will be able to learn with the advantages that come with having access to simulated learning environments and the learning by observation approach, that is, Learning from an expert.



As such, the best educational materials, thoroughly prepared, will be available in this program:



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.

This content is then adapted in an audiovisual format that will create our way of working online, with the latest techniques that allow us to offer you high quality in all of the material that we provide you with.



Practicing Skills and Abilities

You will carry out activities to develop specific competencies and skills in each thematic field. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop within the framework of the globalization we live in.



Interactive Summaries

We present 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".



Additional Reading

Recent articles, consensus documents, international guides... In our virtual library you will have access to everything you need to complete your education.





Case Studies

Students will complete a selection of the best case studies in the field. Cases that are presented, analyzed, and supervised by the best specialists in the world.



Testing & Retesting

We periodically assess and re-assess your knowledge throughout the program. We do this on 3 of the 4 levels of Miller's Pyramid.



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 for future difficult decisions.



Quick Action Guides

TECH offers the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical and effective way to help students progress in their learning.



06

Certificate

The Postgraduate Certificate in Integration of Speech Recognition Technologies in Machine Interpreting guarantees, in addition to the most accurate and up-to-date training, access to a Postgraduate Certificate issued by TECH Global University.



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*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 a **Postgraduate Certificate in Integration of Speech Recognition Technologies in Machine Interpreting** endorsed by TECH Global University, the largest digital university in the world.

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 Integration of Speech Recognition Technologies in Machine Interpreting**

Modality: **online**

Duration: **6 weeks**



*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.



Postgraduate Certificate
Integration of Speech
Recognition Technologies
in Machine Interpreting

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Postgraduate Certificate

Integration of Speech Recognition Technologies in Machine Interpreting

