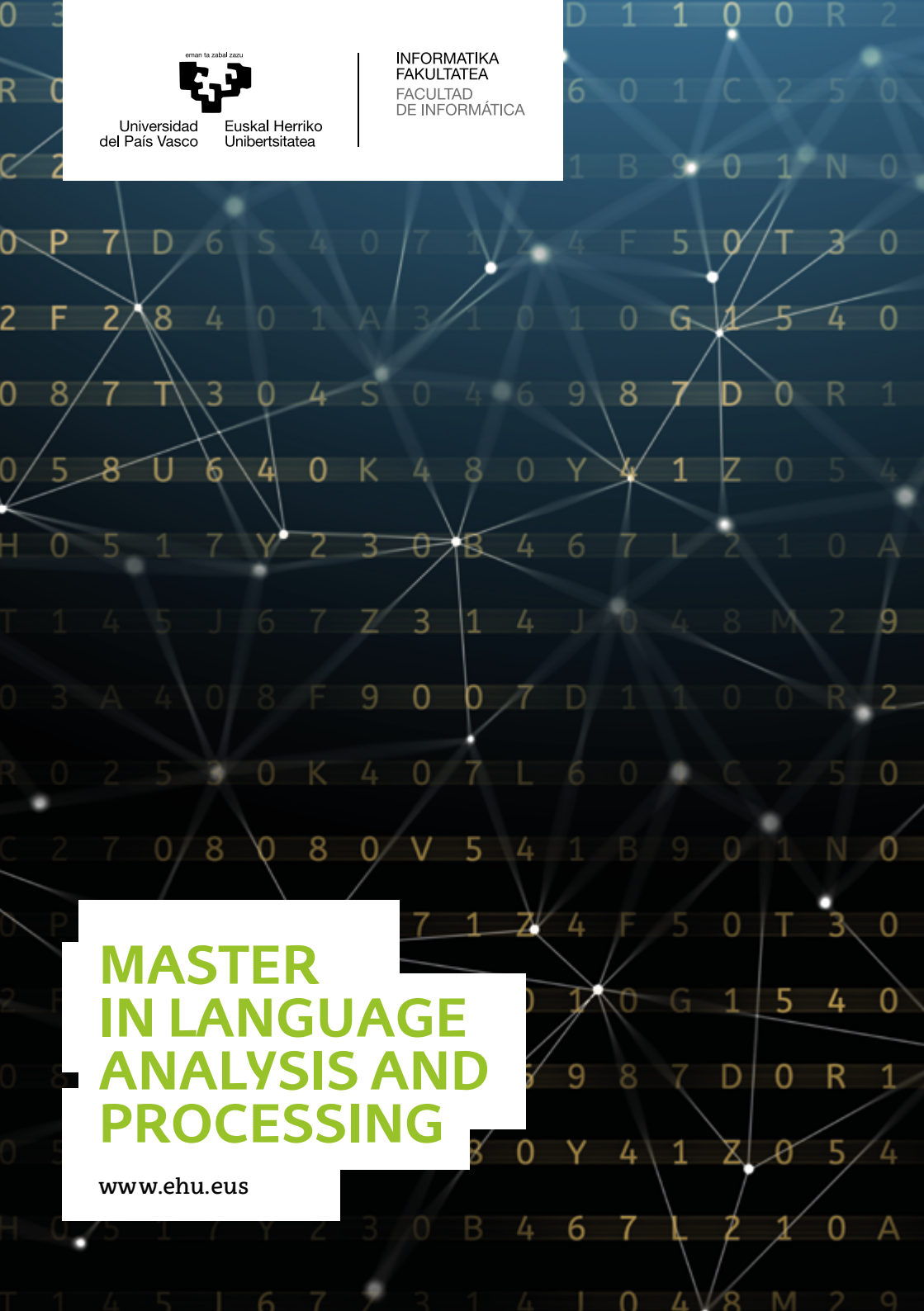

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Universidad del País Vasco

Euskal Herriko Unibertsitatea

INFORMATIKA FAKULTATEA

FACULTAD DE INFORMÁTICA

# MASTER IN LANGUAGE ANALYSIS AND PROCESSING

www.ehu.eus

## INTRODUCTION AND OBJECTIVES

Language technologies are the latest challenge facing us in the field of Artificial Intelligence. As advanced applications are becoming more and more integrated into digital devices, they are quickly taking on an important role in our lives. These applications are based on language analysis and processing techniques, such as machine translation, voice recognition and automatic speech synthesis, dialogue systems, question-answering, information mining and Internet search systems, to name but a few.

These are essential components in Artificial Intelligence-based solutions that provide humans with the opportunity to communicate naturally with machines (e.g. Siri or Alexa) or with other human beings (e.g. using the Skype machine translator). Different areas of knowledge are necessary in these technologies: computing, linguistics, statistics, artificial intelligence, machine learning, deep learning...

If you come from the world of IT,engineering or mathematics, you will want to know which computational tools for language processing are behind those applications or how they can be integrated into other applications or web pages. On the other hand, if you come from the world of linguistics, or you have completed translation studies, you will undoubtedly want to know how linguistic knowledge (lexicon, meaning of words, parsing, morphological and semantic analysis, etc.) is integrated into these tools.

The answers to these questions, and to many others, can be found in this master's degree. There is a current need for researchers who can work on research and development in the field of language analysis and processing.

Proof of this is the catalogue of products developed by the research group Ixa and HiTZ the Basque Center for Language Technology which are the driving forces behind this programme, as well as the projects in which they participate.

This master's degree also shares content and group with the Erasmus Mundus Master in Language and Communication Technologies (LCT) (https://www.ehu.eus/en/web/master/master-language-communication-technologies).

## PROFILE FOR ADMISSION

Degree, engineering qualification or similar in: Computing, Management IT and Information Systems, Philology, Translation and Interpreting, Basque or English Studies, Telecommunications or Mathematics.

Other related areas, such as Computational Linguistics, Language Technologies or Cognitive Sciences.

## ABOUT THE COURSE

| | |
|---|---|
| **Teaching venue:** | Faculty of Informatics. |
| **Teaching type:** | On-site. |
| **Teaching language:** | English. |
| **Approximate fees:** | 2.950-3.150 €. |
| **Calendar:** | From October to June, afternoon sessions. |

## STUDY LOAD

90 ECTS / 3 semesters

| Compulsory Subject Courses | Optional Subject Courses | Research Projects | Total |
|---|---|---|---|
| 9 ECTS Credits | 51 ECTS Credits | 30 ECTS Credits | 90 ECTS Credits |

## TRAINING SYLLABUS

- Programming Techniques for NLP
- Theoretical Linguistics
- NLP Applications **(I)** :Understanding NLP
- Machine Learning **(II)**
- Corpus Linguistics
- Introduction to Machine Learning
- Computational Morphology
- Computational Syntax
- Computational Semantics and Pragmatics
- Automated Reasoning
- Speech Processing
- Speech Technologies
- Building Language Resources
- NLP Applications **(II)**: Building Systems
- Machine Translation and Multilingualism
- Language Technologies for Digital Humanities
- Deep Learning
- Research Methods for NLP
- Statistics and Mathematics for NLP

## CONTACT

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## PARTNERS

www.ehu.eus/en/web/master/master-lenguage-analysis-processing