

Master of Digital Text Analysis

2024-2025

Analyse digital text at scale,
with **artificial intelligence**
at your fingertips!



University
of Antwerp

| Let's shape the future

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Digital text analysis takes state-of-the-art techniques from data science and artificial intelligence, and applies them to textual problems; be that literary, linguistic, political, historical or social.



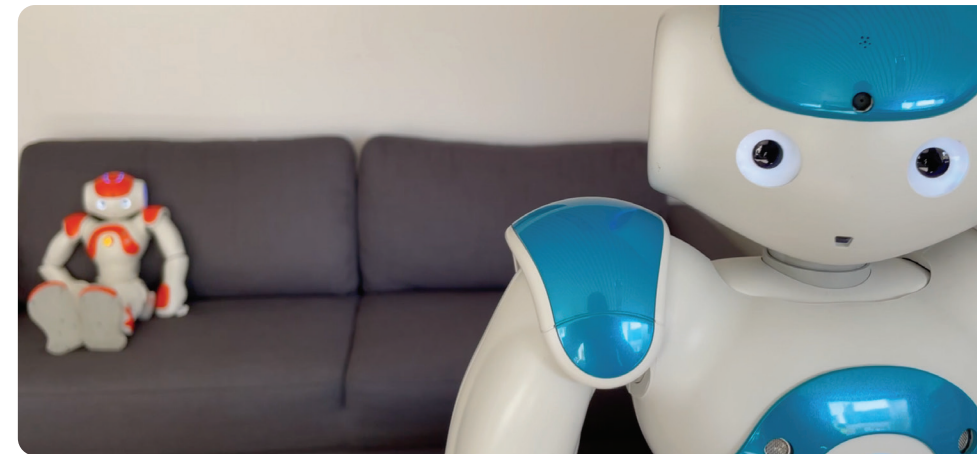
In brief

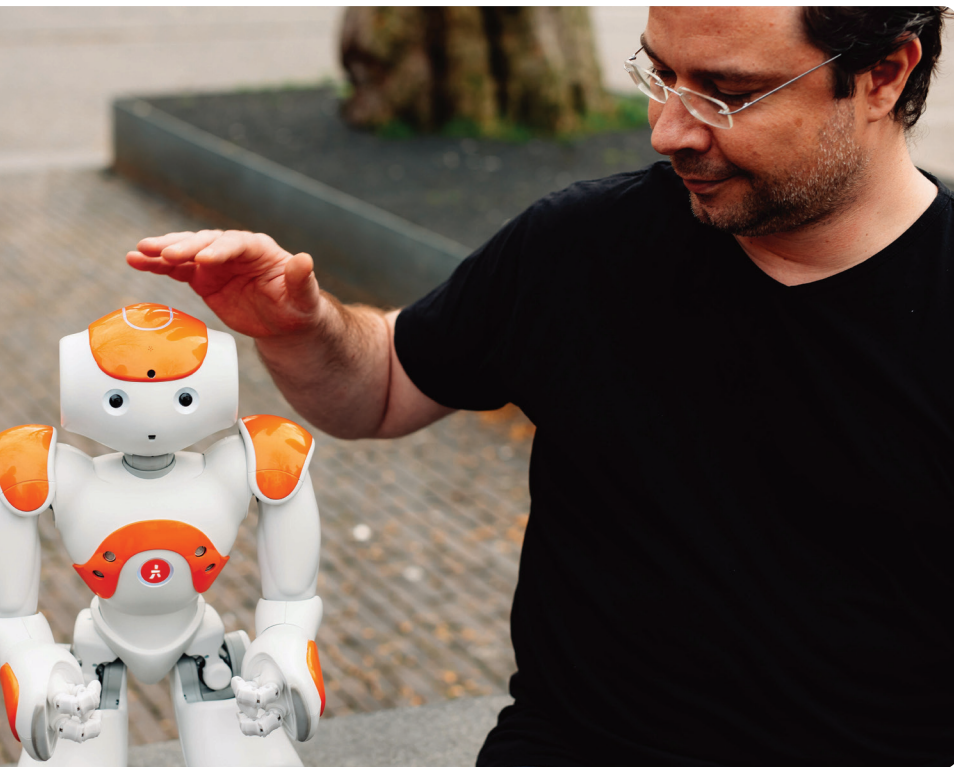
The Master of Digital Text Analysis puts computational approaches to **text as data** first, specifically for students with a background in the Humanities (and Social Sciences). **The specific focus on Humanities undergraduates is unique:** in just one year, you'll learn how to program complex models of digital text from scratch, using Artificial Intelligence and Data Science, and including state-of-the-art approaches from Computational Linguistics and Literary Studies. This programme offers you the opportunity to develop a unique research profile that is currently much sought after in both academia and industry.

In detail

Present-day society is **flooded by digital data**. Natural language processing and artificial intelligence have become crucial instruments in managing this wealth of material. Across both academia and industry, there is great demand for research scientists who can efficiently manage and analyse large collections of textual documents and formulate interpretive insights about them, on the basis of computational modelling.

With this programme, we aim to deliver talented young masters, who are **experts at analysing textual data** using computational means, drawn from modern data science and, especially, the rapid developments in artificial intelligence. We specifically cater for an audience of Humanities undergraduates, from fields such as linguistics, literature or history, who aim to complement their interpretative domain expertise by harnessing computational skills in data analysis.





Recently there has been an impressive improvement in the accuracy of applications like speech recognition and machine translation. I have been doing research in machine learning and natural language processing since the early nineties, but I have never seen progress like this before. Language and text technology are really taking off!

Prof. Walter Daelemans, Full Professor of Natural Language Processing

An attractive feature of this programme is that we start from scratch, so that **no prior knowledge about programming** is required. Via an intensive bootcamp at the start of the first term, you'll learn how to read complex models of digital text in just one year. **Major topics** that we'll cover include:

- Machine Learning
- Data Science
- Data Visualisation
- Information Retrieval
- Natural Language Processing
- Computational Humanities

```

[42] text = 'environmental officials are saying that...
[43] entities(text)
environmental officials are saying that
this is the
worst environmental disaster to hit this
coastline
in recent years DATE now over the weekend DATE
thousands CARDINAL of volunteers now joined by
soldiers have been trying to clear as
much of the beach as they can
you can see the kind of painstaking work
this is a lot of the tar is embedded
below the sad this is incredibly sticky
stuff
so you can see the real problem with
that they've had to ask people now to
register before they just show up at the
beach because of the potential

```

Programme structure

1 Bootcamp

The first semester starts with a unique feature: a **three-week 'bootcamp' (6 ECTS)**, where students are immersed in the world of computer programming. During this intensive course, you will learn the basics of Python, an accessible programming language that has rapidly become the lingua franca of scientific programming. No other courses are scheduled during the three-week period, so that students can focus on acquiring their new skills. During the remainder of the term, weekly follow-up sessions are organised for the students, covering both practical components, such as practicing advanced topics in Python programming, and more theoretical topics, such as introduction to important sub-domains in digital text analysis.



2 First-semester modules

After this initial in-depth exposure to computer programming, the rest of the first semester consists of six modules that each cover an essential topic in **contemporary data science, information and machine learning**:

— **Text as Data:** current approaches to efficiently storing, transforming and enriching (un)structured text (X-technologies)

— **Machine Learning:** an introduction to the basics of machine learning in Artificial Intelligence, with an emphasis on some of the 'evergreens' in the field, such as perceptrons and support vector machines

— **Humanities Data Analysis:** an introduction to established methods in statistics and data science, with an emphasis on real-world research issues in the Humanities at large

— **Corpus Studies:** an introduction to quantitative corpus analysis, focusing on linguistic insights that can be derived from large textual datasets

— **Information Science:** a hands-on introduction to information science and retrieval, e.g. the effective querying of large textual data sources



What I like most about the programme is that the professors are very hands-on; they have given us excellent tools to learn how to do real thorough research.

Dora Modrall Sperting

3 Second-semester modules

In the second semester, there are two term-long **mandatory courses** that all students must follow:

Natural Language Processing (6 ECTS credits):

In this course, students learn how to apply their newly acquired skills in the context of natural language processing. Attention is paid to deep learning models that currently hold the state-of-the-art in many tasks.

Computational Literary Studies (6 ECTS credits):

Throughout cultural studies, there has been a surge in the interest of computational methods for the distant, or panoramic analysis of textual datasets. In this course, we will cover the main technologies that are currently in computational literary studies, including stylometry, topic modelling or text reuse detection.

The two courses in the second semester give students the room to delve into (academic or industrial) **internships**, which most students take up in this term, as well as into their **Master's thesis**, in which the students are expected to demonstrate their maturity, rigour and independence as a digital text analyst.



The reason I chose Digital Text Analysis is because I wanted to do more than just learn theory. I come from a humanities background and I wanted to explore that in a more practical way.

Vasiliki Zafeiropoulou

By the end of this degree, **you will be able to:**

- effectively program in **scripting languages**, such as Python and R
- perform a **sound statistical analysis** of a phenomenon of interest
- be able to **analyse** in depth the **linguistic properties** of text using natural language processing
- **apply machine learning** to various empirical problems in the humanities
- provide **nuanced interpretive answers** on the basis of quantitative models.

Most of our teaching is highly hands-on, focusing on the use of programming **notebooks**. This interactive format enables students to tinker with example code on the fly and stimulates the pedagogic exchange between teachers and students. Likewise, most of the assessments are **practice-oriented** and in the form of (individual or group) **project work**. For this programme students need to have a **personal laptop** available throughout the academic year and this must be brought to class when required.

Curriculum

Compulsory courses	ECTS credits 33
Bootcamp	6
Text as Data	3
Corpus Studies	3
Humanities Data Analysis	3
Machine Learning	6
Information Science	3
Natural Language Processing	6
Computational Literary Studies	6

Free space	ECTS credits 6
Internship or Text Mining	

Master's thesis	ECTS credits 18

Total	ECTS credits 60



In high school, I was told I'd simply have to choose between humanities and technology - that there was no way I could combine these two interests. But now, the Master in Digital Text Analysis fills this gap!

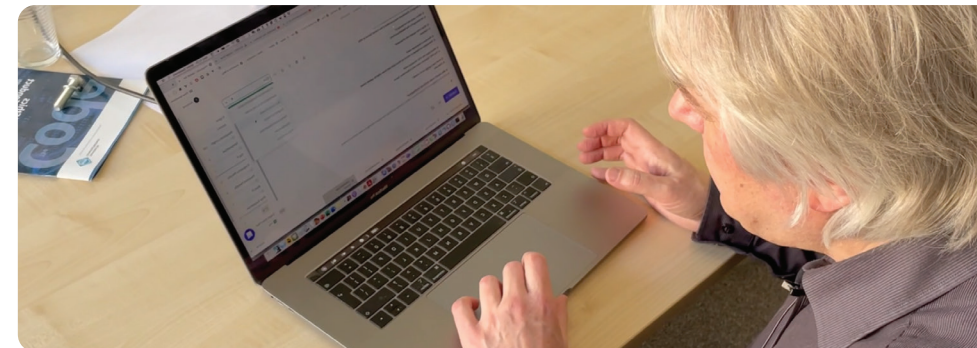
Dr. Lisa Hilte (BE),
postdoctoral researcher
in sociolinguistics

Job opportunities

The focus of this Master resembles that of a Research Master and will deliver ambitious, well-skilled students that are perfectly equipped for a **PhD track**, for instance, in computational humanities or allied domains. Many students will take up careers as **research/data scientist** in the (tech) industry, where they'll work on analysing textual data, such as customer data, likely in the context of machine translation, dialogue systems or recommendation engines. Finally, we expect many of our students to find opportunities in the cultural or GLAM sector (galleries, libraries, archives, museums), where employees combining a passion for computing technology and culture are highly sought-after.

Orientation year

After completing your studies you can choose to look for work opportunities in Belgium. You can apply for an orientation year and extend your stay in Belgium by 12 months. Guidance and administrative assistance with this process is available through the university.



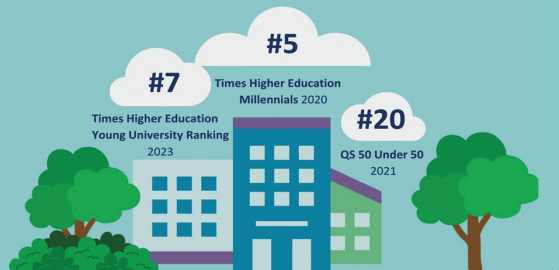
Why choose UAntwerp

Our university is located in the **city of Antwerp**, in the heart of Belgium and Europe. The port of Antwerp is one of the biggest in the world. Antwerp is not just an ancient medieval and baroque city, full of history. It is also a bustling metropolis with a vibrant social scene, impressive architecture and cultural contrasts. Over 170 nationalities live here, more than in New York! This cosmopolitan vibe is also reflected at the University of Antwerp.

First-rate research and education make the University of Antwerp a wonderful place to study and to work. We foster the nexus between research and education. Internationalisation is key to our mission. It is no coincidence that the University of Antwerp is a partner in a highly promising European University Network, the Young Universities for the Future of Europe www.YUFE.eu.

As home away from home to over **20,000 students**, the University of Antwerp prides itself on operating on a human scale. Our faculty and staff will welcome you into top-notch infrastructure on one of our four campuses. While you're here you are also invited to enjoy our vibrant cultural programme, sports facilities and many student services.

The University of Antwerp scores extremely well in Young University Rankings



Testimonial

I come from the Bachelor's in Languages and Literature and I was very intrigued by Linguistics in general. I really found that the base of this programme — the skillset and the knowledge we would learn — would be a very big asset in the field of Linguistics. This really is the future of research. [...] So I chose this Master and I'm really happy that I did because I acquired a lot of skills and knowledge and a really different way of thinking as well. I was thrilled to start a PhD and I do feel like the Master's programme gave me an advantage.

Anouk Van den Stock, PhD researcher



Admission requirements

The Master of Digital Text Analysis is open to candidates with one of the **following degrees**:

- Bachelor of History
- Bachelor of Philosophy
- Bachelor of Linguistics and Literary Studies
- Bachelor of Applied Language Studies
- Bachelor of Laws
- Bachelor of Communication Studies
- Bachelor of Sociology
- Bachelor of Political Science or
- Bachelor of Social-Economic Sciences.

Other academic Bachelor's degrees need permission from the faculty. No previous experience with computing technology or programming is required (except basic computer skills).

We require a **motivation letter** that discusses the candidate's prior **affinity with a relevant discipline**, as well as how this specific programme fits the candidate's prior experience and future ambitions.

Since the programme is taught in English, candidates with a prior degree issued outside Belgium, the Netherlands or Luxembourg are required to demonstrate their proficiency in English.

They can do so in two ways:

- Either by submitting a **language certificate** showing their TOEFL, IELTS or ITACE results (C1 level)
- Or by **submitting proof** they have studied at least one academic year (or 60 ECTS credits) in a Bachelor's or Master's programme about the English language and or literature.



Application procedure

Candidates with a Bachelor's or Master's degree from a higher education institution in Belgium, the Netherlands or Luxembourg can enrol directly into the programme. Candidates who do not fulfil this condition or who need a student visa must submit an online application through the **Mobility Online** tool. Applications for the academic year 2024-2025 can be started in Mobility Online from 9 November 2023 onwards.

Application deadlines

To submit an application through Mobility Online

For non-EEA * nationals and for students who need a visa: **before 1 March 2024**

For EEA nationals: **before 1 June 2024**

Enrolment deadline

4 October 2024

Enrolments start on 1 July 2024.

The academic year 2024-2025 starts on Monday 23 September 2024.

* **EEA** = European Economic Area

Member states:

Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain and Sweden

ECTS credits

The University of Antwerp applies the '**European Credit Transfer and Accumulation System**' (ECTS) in all its degree programmes.

A full-time one-year study programme amounts to **60 ECTS credits** (30 ECTS credits per semester), which implies a student workload of about 1500 to 1800 hours. One ECTS credit stands for 25 to 30 hours of work including contact hours, preparatory work, study and assessment.



Quick facts

Level

Master

Language

English

Credits

60 ECTS credits

Number of years

1

Tuition fee per year *

EUR 1092.10 for EEA nationals

EUR 5800 for non-EEA nationals

Campus

Stadscampus

Faculty

Arts

More information

[www.uantwerpen.be/
digital-text-analysis](http://www.uantwerpen.be/digital-text-analysis)



* subject to yearly revision

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This brochure was published in September 2023.
As all information is subject to change,
please check our website for the latest updates.