MASTER OF SCIENCE
INTERACTION
TECHNOLOGY

UNIVERSITY OF TWENTE.

INTRODUCTION
MASTER INTERACTION TECHNOLOGY

Delve into the field of human-computer interaction and design and develop interactive technologies that are meaningful to people and society.

In today's 21st century, modern technology is integrated into our daily lives more than ever before. But none of the advanced technologies we use today would have been successful if humans failed to interact with them. Human-computer interaction is one of the most important considerations in any kind of technological development. So how can you include the user in those developments? For example, what does it take to design a robot that can recognise and respond to human emotions? Or a technology that enables mediated social touch between loved ones? If you are interested in the field of human-machine interaction and you want to design and develop interactive technologies that are meaningful to people and society, the Master's in Interaction Technology is right for you.

FOCUS

In this two-year, English-taught Master's, you will study as well as shape the interaction between people and (IT-based) technologies. From ideation to prototyping to evaluation; you will learn to design intelligent, interactive and socially aware systems that are aligned with end-user needs and can enhance user experience. To do so, you will gain knowledge within fields such as computer science, human-machine interaction, Artificial Intelligence, and/or electrical engineering, and complement this with an in-depth understanding of human behaviour and user contexts.

CAREER PERSPECTIVES

With the rise of new technologies, devices, and forms of connectivity, we see more and more intelligent, interactive systems, capable of supporting and extending human activities. With such smart innovations rapidly unfolding, there's a growing demand for experts in the field of interaction technology, who can truly embody the view of the user. You can look forward to great career opportunities after graduation!

Broadly speaking, you can start a career as a designer, researcher, or entrepreneur, or even a combination of these roles. You might find a job as a software developer or UX designer at a leading tech company, start an academic career and contribute to research in new interactive tech solutions or you might launch your own start-up, like some of our former students did! Whichever career path you choose, your expertise in key fields of engineering and technology as well as human behaviour and interactions between people and technology is welcomed in a wide variety of organisations and sectors.
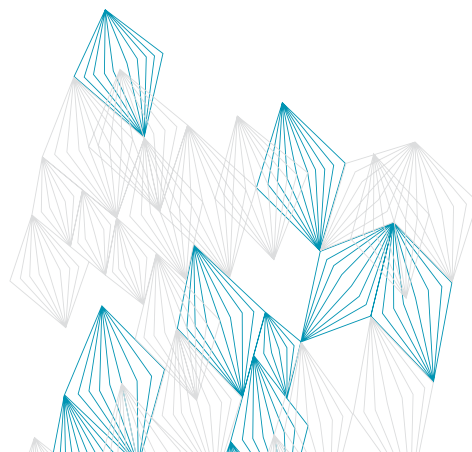
QUICKFACTS

Degree	Master's degree in Interaction Technology	**CROHO**	60030
Faculty	Electrical Engineering Mathematics and Computer Science	**Duration**	2 years
Language	English-taught	**Start**	1 Feb 2023 1 Sep 2023
Web	https://ut.onl/hmi		

MASTER'S STRUCTURE
HOW TO COMPOSE YOUR MASTER'S?

You have a great deal of freedom in putting together your own Master's and aligning it with your interests and ambitions. With a broad selection of courses to choose from within domains of technology, social sciences, design, research, entrepreneurship and more, you can develop your own unique profile!

You will collect 120 EC within two years. You have a great deal of freedom in composing your own curriculum. Together with the programme mentor, you will discuss how to compose a set of courses meeting your specific interests, while also complying with the coherence of the programme as a whole.

SIX PILLARS
You will build your curriculum around six pillars. Within each pillar, there's a large variety of courses you can choose from, to help you gain knowledge and skills across the full breadth of the field of interaction technology.

The six pillars include **Technology**, **Understanding Humans & Context**, **Research**, **Storytelling**, **Design**, and **Impact, Innovation & Entrepreneurship**. Additionally, there is an elective space of 25EC allowing you to either choose more courses, do an internship or take some courses at a university abroad.

You will end your Master's in Interaction Technology by writing your master's thesis (30 EC). You can conduct your final project within the industry, perform research at the university or complete your thesis abroad.

CONTENT OF THIS MASTER'S

Learn to recognise and act upon human challenges and opportunities by creating and evaluating meaningful, intelligent, interactive systems.

This Master's combines **research**, **design**, and **entrepreneurship**, enabling you to design and develop new interactive technologies and systems that are meaningful to people and society. In that sense, you will ask yourself: how can technology support or enrich people's lives? And how does a technology best suit their wishes and needs? You will work on impactful solutions for relevant, real-life challenges. For example, how can speech technology assist people who cannot speak? Or what does it take for people to trust and accept self-driving cars?

On the **technology side**, you can take in-depth courses in computer science, artificial intelligence and/or electrical engineering. On the **human side**, you will learn to analyse human behaviour and user contexts but also develop your entrepreneurial, design and storytelling skills to ensure the best possible connection between your technological solution and the people or organisations you are developing it for. In the end, it's about understanding and conveying the value of a technology or any other interactive system in today's society.

WHAT WILL YOU LEARN?
After completing the Master's in Interaction Technology, you:

- have knowledge of methodologies for user-oriented design, including the drafting of user requirements and user studies
- are able to think out of the box and find innovative solutions for real-life, societal problems
- value multidisciplinary approaches towards technological innovations

EXAMPLES OF COURSES YOU FOLLOW DURING THIS MASTER'S:
- In the course **Brain Computer Interfacing**, you will learn to explain and apply methods for analysing and classifying brain waves, using EEG technology.
- The course **Social Robot Design** will teach you to use methods from the world of interaction design (UcD, UxD, Co-design) and apply them in the specific context of Social Robot Design.
- How can an application recognise and generate affective/social behaviour? The course **Affective Computing** provides an overview of several research areas such as emotion theory, data collection and annotation, vocal and facial expression analysis, machine learning and social signal processing, and affect generation.

DOUBLE DEGREE IN HUMAN COMPUTER INTERACTION AND DESIGN
If you are interested in the field of human-computer interaction, combined with innovation and entrepreneurship, you can also opt for the double degree programme in Human Computer Interaction and Design (HCID) of the EIT Digital Master School. This international Master's entails two years and allows you to study one year – either the first or the second – at the University of Twente and one year abroad at one of the following partner universities in Helsinki, Stockholm, Paris, Madrid, Milan, or Trento.

"When I graduated from Creative Technology, I didn't know exactly what I wanted to do. I ended up doing an internship at a company that makes VR applications for the construction industry. During this internship, I discovered once again how much I enjoyed working on the interaction design of digital products. That is when I decided to enrol in the Master's in Interaction Technology."

If you ask me, the interaction between humans and computers is increasing nowadays, but our understanding of it is decreasing. Nowadays, almost everyone has a smartphone, all office jobs require a computer and VR and AR are increasingly used in the entertainment industry and for training (e.g. surgeons practicing a difficult operation). Good interaction design is necessary to ensure that these products are a real addition to our lives and make our lives easier, more efficient and, above all, more fun. For example, during my thesis, I actually studied how the specific technology virtual reality can be used to meet a societal need.

CONFRONTING FEARS WITH VR
With functional near-infrared spectroscopy (fNIRS), I measured the brain activity of people while they were standing in virtual reality on a tall building. With various machine learning algorithms, we studied to what extent we can detect and predict fear responses.

This technology can eventually be applied in a real therapy setting, for example to expose people to their fears in a safe and controlled way. It was amazing to be able to combine my knowledge of virtual reality, brain-computer interfaces and machine learning, all of which I studied during my master's, in just one project.

A COMPUTER-CONTROLLED LIFE?
Interactive systems are (simply put) systems where there is an interaction between man and computer, often to achieve a certain goal. But it can also be intended for entertainment. For example, the self-service checkout in the supermarket, your phone, the ATM or the infotainment system of a car. For some people technology plays a bigger role in their lives than they realise. As a matter of fact, we might have even become very dependent on technology. I think that ITech can do a lot in terms of designing the best possible human-computer interaction, also for future technologies and systems. That is literally what you learn in this Master's.

Nevertheless, I also think that we must make people aware of how dependent they are on technology and to what extent certain systems are safe or not. Instead of just focusing on the 'seamless integration' of technology in everyday life. As far as I am concerned, we should also make our users aware of the ethical aspects of certain technologies.

A GOOD BASIS FOR FUTURE JOBS
When I was looking for a job after my graduation, I noticed that there is a lot of interest in people who can look at things from different perspectives. We live in a world where technology is becoming more important. However, it is also important to ensure that we continue to deal with this technology and understand how these changes impact our lives. Their added value, but also possible threats.

I also noticed that companies are extremely interested in my broad orientation and hands-on experience in certain areas. In my opinion, most important when landing a new job is showing that you mastered many different techniques and that you can learn others quickly. The Master's in Interaction Technology definitely provided me a good basis for future jobs!"

"*We have become more dependent on technology. In I-Tech I learned both technical skills and the understanding of how these technological changes impact our lives.*"

- Luciënne de With -

NEED AND NICE-TO-KNOW
STUDENT INFORMATION

There are a couple of things you should know before you apply for the Master in Interaction Technology. In addition, you will find some nice-to-know information about this Master's. For example, the promising career prospects.

As technology continues to develop and become more widely available, there will be an increasing demand for interaction technologists.

YOUR FUTURE CAREER
In today's highly competitive (digital) markets, successful design in terms of human-computer interaction is one of the most important prerequisites; it can be the difference between success and failure. Many organisations are looking for graduates with your expertise, from leading tech and software development companies to digital agencies to many other organisations in other sectors, for example in the medtech (medical technology) or edtech (educational technology) industry.

WHERE DO GRADUATES WORK?
After graduation, you might start a career as a software developer, UX designer or front-end developer, project manager, multimedia designer, or UX consultant to name some examples. Many graduates of this Master's currently work within the ICT sector, focusing on user experience, whereas others went on to work as a researcher within a research institute. UT alumni with a Master's degree in Interaction Technology found exciting jobs in various organisations. For example:

- Front-end Developer at Nedap Healthcare
- Scientist Innovator at TNO Research
- Design Technologist & UX Prototyper at Miele

YOU START YOUR STUDIES IN SEPTEMBER OR FEBRUARY. IN CASE YOU NEED TO FOLLOW THE PRE-MASTER'S FIRST, YOU CAN ONLY START IN SEPTEMBER AND CONTINUE WITH YOUR MASTER'S IN FEBRUARY.

ADMISSION REQUIREMENTS

Applicants for the Master's in Interaction Technology should have a bachelor's degree Computer Science, Cognitive Science, Electrical Engineering, or an equivalent qualification. Next to this, we require knowledge of the following topics: Linear Algebra, Statistics & Probability, Theory of automata and formal languages, Logic, Experience with either Artificial Intelligence or Human Computer Interaction.

Additional requirements
International students: English-language test results. Academic IELTS, overall band score of at least 6.5, or TOEFL, internet-based (TOEFL-iBT) of at least 90, or Cambridge CAE-C (CPE). For the minimum CPGA of your country, please visit our master's website: utwente.nl/go/master/country-list

DUTCH UNIVERSITY OF APPLIED SCIENCES

Depending on your previous education and your grades, you may need to complete a pre-master's first. Directly related to Interaction Technology are: Computer Science, Artificial Intelligence, Media Technology, Creative Technology, Design or an equivalent qualification. The starting date of the pre-master's is in September and February. After finishing your pre-master's successfully, you can directly enter the Master's. It is also possible to complete the pre-master's as a minor during your Bachelor's degree. Minor students can enter the Master's in February or September after finishing the pre-master's.

For more specific admission requirements, please visit our website: utwente.nl/go/itech.

DO THE ONLINE ELIGIBILITY CHECK

Our eligibility check is designed to assist you as a student **holding a non-Dutch diploma**. This online test gives you an indication of your eligibility to be admitted to the master's of your interest and takes about five minutes to complete. Start the check!

GET IN TOUCH

Questions about a study programme of your interest? Whatever your question is, we will be happy to help you.

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FACTS & FIGURES
WHY CHOOSE TO STUDY AT UT?

As a UT student, you will learn how to use innovative technologies to influence today's societal challenges in a meaningful way. We call it High Tech Human Touch.

You will benefit from excellent, highly personalised education and research in fields ranging from social sciences to engineering and natural sciences to life sciences. **You will learn to work with experts from other disciplines and cultures**. In doing so, you will develop in-depth professional knowledge and intensive personal growth.

Your study location is our campus: a dynamic community for young people to work, live and socialise. It's a breeding ground for brilliant ideas, where you follow academic education and apply your new skills in the various state-of-the-art labs. This is also where you meet up with friends, play sports or visit the theatre. You can even go for groceries or catch up in the bar.

384 LAB FACILITIES

130 STUDENT AND STUDY ASSOCIATIONS

40 SPORT ASSOCIATIONS

> 90 NATIONALITIES

4,941 MASTER'S STUDENTS

7,468 BACHELOR'S STUDENTS

3,000 STUDENT APARTMENTS

18 PERFORMING ARTS ASSOCIATIONS

146 CAMPUS AREA IN ACRES

4,148 INTERNATIONAL STUDENTS