The richness and importance of the information conveyed by data has led to a rapid increase in the influence of data on both individuals and society.

Data of various kinds, such as the enormous data collections on the Internet, have become omnipresent in virtually all aspects of society. Digital data have become the key to innovations in both social and scientific domains, ranging from energy, economy, health and climate to bioinformatics and web science.

In the Data Science & Technology (DST) track of the Computer Science MSc programme, you will learn how to engineer and develop systems capable of processing and interpreting massive data sets to extract important information. Fundamental and practical issues of the analysis of data will be addressed, including security of data and software, visualisation of information, decision-making from data and high performance computing algorithms.

DST is meant for students who want to develop and use software that gives meaning to data in order to support experts from various application domains (such as economy, medicine and marketing) to better understand the information they possess.

<table>
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<tr>
<th>Diploma</th>
<th>Master of Science Computer Science Track: Data Science &amp; Technology</th>
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<tbody>
<tr>
<td>Credits</td>
<td>120 ECTS, 24 months</td>
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<tr>
<td>Starts in</td>
<td>September</td>
</tr>
<tr>
<td>Language of instruction</td>
<td>English</td>
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<tr>
<td>% International students</td>
<td>40%</td>
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Faculty of Electrical Engineering, Mathematics and Computer Science
After completing my bachelor’s degree in Milan, Italy, I decided to continue my studies in the Netherlands. I chose to study at TU Delft because the university is well known and I chose DST specifically, as the programme was aiming exactly at my interests: Data and AI. The courses offered seemed to be challenging and extremely specific, which was exactly what I was after. My first thought of the TU campus, upon arrival, was ‘Wow, these buildings are impressive!’ While studying DST, I really enjoyed the fact that there are a lot of projects involved in many of the courses: it’s nice to apply and develop the skills on your own with actual projects that are supported by the professors. One of the seminars that I really enjoyed was ‘Selected Topics in Multimedia Analysis’ as it was my first seminar where the lectures given were made by us, the students, using topics and research that interested us the most. Overall, I’m glad I made the decision to join this master’s programme. The opportunities and the challenges opened were beyond my expectations. Now that I have graduated, I would like to keep working at the University on one of the many research projects. There are so many questions left unanswered!
The Data Science & Technology track offers students freedom in choosing subjects and specialisations. Eventually, after this broad orientation, you will join one of the research groups for your specialisation and thesis. Some examples of projects and topics that graduates have specialised in during their studies are:

- A music recommendation system that recognises the user's context and automatically recommends suitable music.
- The non-invasive prenatal (NIPT) test. A test for detecting abnormalities in the foetus during pregnancy that has been used in Dutch hospitals for several years now. An algorithm can determine whether a trisomy (a chromosomal disorder, e.g. Down syndrome) is present in the DNA. The test is less dangerous to the foetus than the previously used chorionic villi (wispy projections of placental tissue) sampling method.
- A software system for luggage conveyor belts at Schiphol airport. The system recognises the shapes and sizes of luggage, and can make decisions based on this information: it automatically checks for damage and abnormal shapes and pre-sorts the 'abnormal' cases.
- Medical image processing: for example, recognising blood vessels or tumours in an image, or establishing whether heart valves open and close in the correct manner, which reveals how fit a person is.

**Career prospects**

There are basically four professional fields that you can enter after graduation: corporate, start-up, academic or consultancy. Many start working in the banking, gaming or medical industry. During your studies you will have the opportunity to contact companies and start to build a network. Here are a few examples of where DST graduates have found employment:

- Facebook: searching for images and music. A DST graduate now works on the visualisation of high-dimensional data in social networks using the t-SNE method (t-distributed stochastic neighbour embedding – a machine learning algorithm for dimensionality reduction).
- Google: modifying a search engine in such a way that it knows why you are looking for something, resulting in more appropriate queries. A DST graduate received a Google fellowship for this work.
- Start-up: using software technology to analyse photos on social media to identify potential safety risks at large events. For example, the risk of tents collapsing at a festival, or overcrowding in the centre of Amsterdam during SAIL. A DST graduate has turned this research into a start-up.

**Programme specialisations**

- Algorithmics
- Computer Graphics and Visualisation
- Cybersecurity
- Embedded Software
- Interactive Intelligence
- Multimedia Computing
- Network Architectures and Services
- Distributed Systems
- Pattern Recognition & Bioinformatics
- Software Engineering
- Web Information Systems
- Programming Languages

**Special programmes**

**Cyber Security**
A collaboration programme with the University of Twente

**Information Architecture**
A collaboration programme with the faculty of Technology, Policy and Management

**Bioinformatics**
A collaboration programme with Leiden University
International applicants
To be considered for admission to an MSc programme you will need to meet TU Delft’s general admission requirements.

1. A University Bachelor’s degree (or proof that you have nearly completed a Bachelor’s programme) in a main subject closely related to the MSc programme to which you are applying, with good grades on the key courses.
2. A BSc Cumulative Grade Point Average (CGPA) of at least 75% of the scale maximum
3. Proof of English language proficiency. A TOEFL (Test of English as a Foreign Language) with an overall Band score of at least 90 and a minimum score of 21 for each section. Please note that we only accept the TOEFL internet-based test. Or an IELTS (academic version) with an overall Band score of at least 6.5 and a minimum of 6.0 for each section. Or proof that you have passed the University of Cambridge ‘Certificate of Proficiency in English’ with a minimum grade B or the University of Cambridge ‘Certificate in Advanced English’

For international students, the application period starts October 1 and closes at April 1. To start an MSc application, please complete the online application and pay the refundable application fee of € 100. Next, you will receive an email with the link to upload the required documents.

Introduction week
All international students will be welcomed with the award-winning introduction programme. The introduction consists of a variety of workshops and projects, during which you will get to know other international students, visit the highlights of Delft and learn the ins and outs of the TU Delft campus.

For more information about the application procedure and studying at TU Delft in general, go to www.admissions.tudelft.nl.

For further information
Please visit the webpage for all details, complete requirements, deadlines and contact information, please visit:
www.tudelft.nl/msc/cs

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