The richness and importance of the information conveyed by data has led to a rapid increase in the influence of data on individuals and society. Data of various kinds, such as the enormous data collections on the Internet, has become omnipresent in virtually all aspects of our society. Digital data has 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 and Technology 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 e.g. security of data and software, visualization of information, decision making from data, and high performance computing algorithms.

DST is meant for students who want to develop and use software that give meaning to data in order to support experts from various application domains (such as economy, medicine and marketing) to better understand the information that they possess by means of data science techniques.
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!
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 specialization 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 NIPT test. A new test for detecting abnormalities in the foetus during pregnancy. An algorithm can determine whether a trisomy is present in the DNA. The test has been used in Dutch hospitals for the past three years and is less dangerous to the foetus than the previously used chorionic villus sampling method.
- A software system for luggage on the conveyor belts at Schiphol. The system recognises images and the size of the 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: the recognition of blood vessels or tumours in an image, or recognising whether heart valves open and close in the correct manner which reveals how fit someone is.

Career Prospects

There are basically four professional fields that you can end up in after you graduate: 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 build a network. Here are a few concrete examples of areas that DST students have ended up in:

- 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.
- 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 collapsing tents at a festival or large crowds 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
Dutch BSc degree
If you hold a Dutch BSc degree closely related to the Master’s programme, you will be admitted directly. However, if your undergraduate programme is not closely related to the Master’s programme you will be required to take additional courses in what is called a bridging programme. This may be a standard programme, or it may be tailored to your specific situation.

To see which Master’s programmes are open to you on completion of your bachelor’s degree from a non-technical Dutch university go to www.studychoice.nl If you completed your bachelor’s at a technical university, go to www.doorstroommatrix.nl

Dutch HBO degree
An HBO Bachelor’s degree does not qualify you for direct admission to a TU Delft Master’s programme. You will first need to complete a supplementary programme in order to bring your knowledge to the required level. You can do this during your HBO programme by means of a bridging programme after completing your HBO diploma. Entrance requirements for mathematics and English (some exceptions) apply for the bridging programme.

See www.hbodoorstroom.tudelft.nl for detailed information. Applications through Studielink: www.tudelft.studielink.nl

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.

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

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