Computer Science
Data Science & Technology

MSc Programme

The richness and importance of the information conveyed by data has led to a rapid increase in its influence. Data of various kinds, such as the enormous online data collections, 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.

Degree	Master of Science
Starts	September
Type	full-time
Credits	120 ECTS, 24 months
Language	English
Application deadline	1 April 2019
Tuition fee	€ 18.750 (non-EU) € 2.083 (EU)
Scholarships	scholarships.tudelft.nl

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

The DST track is meant to provide students with the knowedge and expertise needed for a professional career in the information and communication technology and related industries or doctoral studies in data and computer science.

Programme

DST offers you freedom in choosing your subjects and specialisations. Some of the subjects covered in the DST track are:

Medical data

Discovering patterns in medical data streams plays a vital role in the healthcare system. These include large amounts of molecular data based on next-generation sequencing,

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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

Common Core courses

- Cyber Data Analytics
- Data Visualisation
- Pattern Recognition
- AI Techniques
- Web Science & Engineering
- Multimedia Search and Recommendation
- Software Architecture
- Advanced Algorithms
- Distributed Computing Systems

For more information on all courses, please visit: www.studyguide.tudelft.nl

medical imaging and sensory data measuring health activity. To unlock this data, you will learn to, for example, develop pattern recognition algorithms for associating DNA sequence data with diseases, as well as multimedia search and retrieval techniques to gather relevant data and visualise medical data sets.

Energy-relevant data
The gathering and processing of relevant data from among others solar cells, electric cars, and intelligent houses to optimise energy usage. You will learn to develop algorithms to recognise energy usage patterns, user modelling techniques for personalisation and preference elicitation, multi modal data fusion algorithms to integrate data, and visualisation techniques to inform human operators.

Infrastructure operation data
Collecting, storing and analysing data on the operation of various infrastructures, for example transport, telecommunications and Internet infrastructures. You will learn to design algorithms for data analysis in order to optime networks or make them more robust, for detecting the behaviours and preferences of infrastructure users, and for recognizing features from surveillance videos.

Environment-relevant data
Gathering, storing, enriching, analysing and applying of data on the interaction that humans have with their living environment. Societal challenges within this area include the need for climate-adaptive buildings and cities, water management in urban environments and improved safety in our delta regions. You will learn techniques and algorithms for the collection, integration and enrichment of data from sensors, humans and infrastructures. You will also learn how to design and implement software and information architectures to model, simulate and analyse the data.

Master's Thesis

In the second year, you will join one of the research groups for your thesis project. It is possible to complete your project in cooperation with international industrial partners.

Examples of Master's Theses

- A music recommendation system that recognises the user's context and automatically recommends suitable music.
- An algorithm that can determine whether a chromosomal disorder, e.g. Down syndrome is present in the DNA.
- 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.

58th
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