SALONE DELL'ORIENTAMENTO 2026

CORSO DI LAUREA MAGISTRALE

DATA SCIENCE AND ENGINEERING

Politecnico di Torino

SCOPRI TUTTI I CORSI DI STUDIO
A.A. 2026/27
www.polito.it

Data Science

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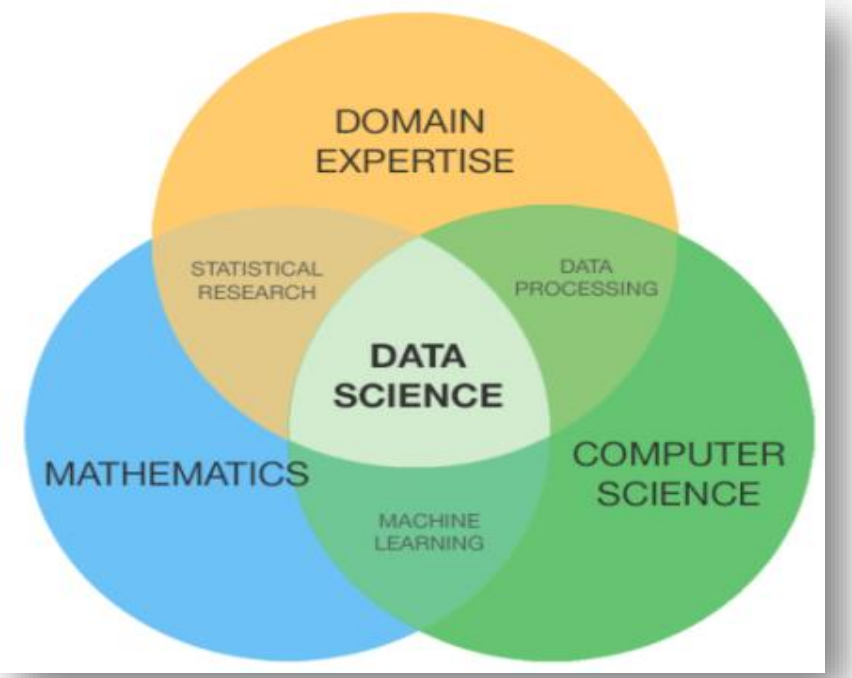
- **Data scientists** must be able to **find meaning in** unstructured **data**, so classes on programming, data mining, and machine learning are often part of the core.
- Data scientists must also be able to **communicate** their **findings** effectively, so courses on **visualization** may be offered, at least as an elective."

- *F. Berman et al. 2018. Realizing the potential of data science. Commun. ACM 61, 4 (March 2018), 67-72*

MSc in Data Science and Engineering

- Motivations
  - Increasing **availability** of (big) **data**
  - Increasing **adoption** of **machine learning** and **deep learning models**
  - Increasing **use** of **data analytics** and **data-driven solutions**
  - Increasing **demand** **for data scientists** and **data engineers**

Objectives



- Training of **interdisciplinary** **professionals** focused on data science

- Core knowledge
  - Models and **algorithms** for **data analysis**
  - **Machine learning** and **Deep learning**
  - Information processes and systems for **data management**
  - **Mathematics**, **statistics,** and **probability**
  - **Distributed** algorithms for **Big Data analytics**
  - **Data ethics** and **data protection**
  - **Innovation management**
  - Strong **hands-on approach**

First-year curriculum

Sem.	YEAR 1 Courses		
1	**Statistical methods in data science** 4 MAT/06 + 4 SECS-S/01	**Computational linear algebra for large scale problems** 8 MAT/08	
	Data science and machine learning lab - 8 ING-INF/05		
	Data management and visualization - 8 ING-INF/05		
	Decision making and optimization 8 MAT/09	**Numerical optimization for large scale problems and Stochastic Optimization** 6 MAT/08 + 2 MAT/06	**Information Theory for Data Science** 8 ING-INF/03
2	**Fundamentals of Artificial Intelligence, Machine and Deep Learning** - 10 ING-INF/05		
	Distributed architectures for big data processing and analytics - 8 ING-INF/05		
	Mathematical and statistical methods for Artificial Intelligence 4 MAT/03 + 4 SECS-S/01		
	Data Ethics and Protection - 3 ING-INF/05 + 3 IUS/01		

Mandatory

Depending on student's previous curriculum

Second-year curriculum

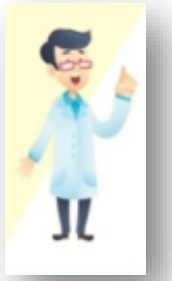
<table>
<tr><td></td><td colspan="4">YEAR 2</td></tr>
<tr><td>Sem.</td><td colspan="4">Courses</td></tr>
<tr><td rowspan="3">1</td><td colspan="4">Innovation management - 3 ING-IND/35 + 3 ING-IND/16</td></tr>
<tr><td>Geometric Learning, Time-Variant Data analysis, and Anomaly Detection
4 MAT/03 + 4 SECS-S/01</td><td>Network Dynamics and Learning
8 MAT/05</td><td>Computer-aided simulation Lab
8 ING-INF/03</td><td>Applied data science project
8 CFU
(max 35 studenti)</td></tr>
<tr><td colspan="2">Deep natural language processing
8 ING-INF/05</td><td colspan="2">Efficient Computing for Artificial Intelligence
8 ING-INF/05</td></tr>
<tr><td>1,2</td><td>Internship 12 CFU</td><td colspan="3">Students chose 2 optional courses, 6 CFU each
many hot topics…
Large Language Models for Data and Software Engineering</td></tr>
<tr><td>2</td><td colspan="4">Master Thesis
22 CFU</td></tr>
</table>

Suggested for «Data Scientist»

Suggested for «Data Engineer»

Professional Roles/Profiles

- Data Scientist



  - Analyses **requirements**, designs data analysis processes (through machine learning **algorithms** and mathematical **models**), visualizes and communicates results
    - Expert in machine learning **algorithms**, mathematical and statistical **models**
    - Communication and decision-making skills

- Data Engineer

  - **Designs** and **develops IT systems** and data analytics **processes** for extracting, storing, and analyzing large amounts of heterogeneous data
    - Expert in computer science **technologies** for managing, analyzing, and extracting knowledge from data
    - Design and implementation of **(big) data science pipelines**
    - Strong engineering skills

Application Areas

- Information technology
- Finance, banking, insurance
- Industrial and energy engineering
- Life, the universe, and everything

Internationalization

- Collaborations and Exchange Programs
  - Erasmus+ program with many European Universities
  - TOP-UIC program
  - Several other international agreements have been established
- International and multicultural environment
  - International students
- **All courses are offered in English**

Admission Requirements

- Automatically admitted: "Classi di laurea"
  - L-8 (Ingegneria dell'Informazione)
  - L-35 (Scienze matematiche)
- Related Bachelor's degrees ("Lauree di continuità" PoliTo)
  - Computer Engineering/Ingegneria Informatica
  - Matematica per l'ingegneria
  - Ingegneria del Cinema e dei Mezzi di Comunicazione
  - Electronic and Communications Engineering
  - Ingegneria Elettronica
  - Ingegneria Gestionale (L-8)
  - Ingegneria Fisica
- Students with other bachelor's degrees are welcome
  - **Good background in computer engineering/science and mathematics is expected**
  - Admission rules on the Politecnico di Torino's teaching portal

Twin Track
Data Science and Engineering + Ing. Matematica

- A predefined path for achieving, sequentially, two Master's degrees
  - Data Science and Engineering
  - Ingegneria Matematica
- Steps

1) Enroll in the Master's degree in Data Science and Engineering and graduate in Data Science and Engineering (2 years)
   - Some specific courses must be inserted into your study plan
2) Enroll in the Master's degree in Ingegneria Matematica and graduate in Ingegneria Matematica(1 year)
   - Characterizing courses on Mathematics (**36 CFU**) + Thesis (**16 CFU**) to achieve also the Master's degree in Ingegneria Matematica

- Nothing to do during the application. Optional selection to express interest in the Twin Track. Pay only attention to the courses you insert into your study plan. You can anticipate courses after the 2nd year.

Ph.D. Programme in

Computer and Control Engineering

- **Current research topics**
  - Computer architectures and Computer Aided Design
  - Data science, Artificial Vision and AI
  - Computer graphics and Multimedia
  - Software engineering and Mobile computing
  - Control and system engineering
  - Life sciences
  - Cybersecurity
  - Parallel and distributed systems, Quantum computing

www.polito.it/en/education/phd-programmes-and-postgraduate-school/phd-programmes/computer-and-control-engineering

www.linkedin.com/company/phddauin/

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Department of Control and Computer Engineering

Information

- Official web page and contacts
- https://www.polito.it/didattica/corsi-di-laurea-magistrale/data-science-and-engineering

- Students' Telegram group **https://t.me/politoDSE**

This is the end.

Actually, this is your new beginning… think big!