SALONE DELL'ORIENTAMENTO 2025

#TOMORROW STARTS TODAY

CORSO DI LAUREA MAGISTRALE

INGEGNERIA INFORMATICA

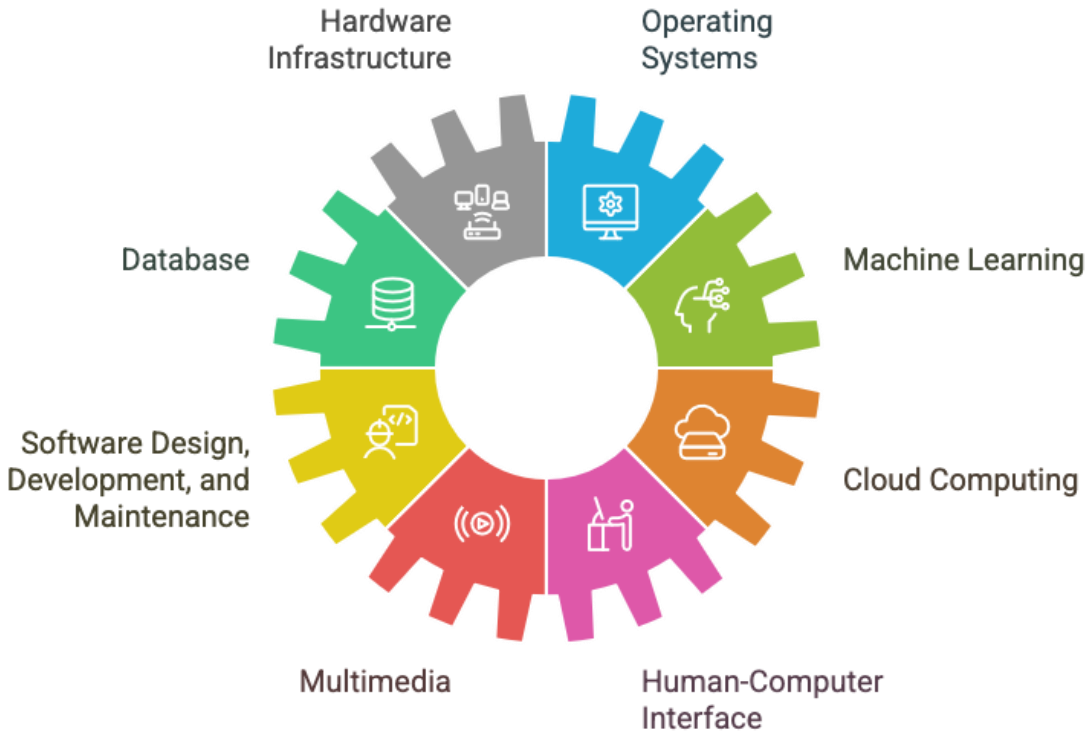
COMPUTER ENGINEERING

Politecnico di Torino

SCOPRI TUTTI I CORSI DI STUDIO
A.A. 2025/26
www.polito.it

Master of Sciences in Computer Engineering

- Computer Engineering:
  - It is a branch of engineering that studies computer systems from the hardware and software point of view, focusing on the design, development, and maintenance of complex elaboration systems.

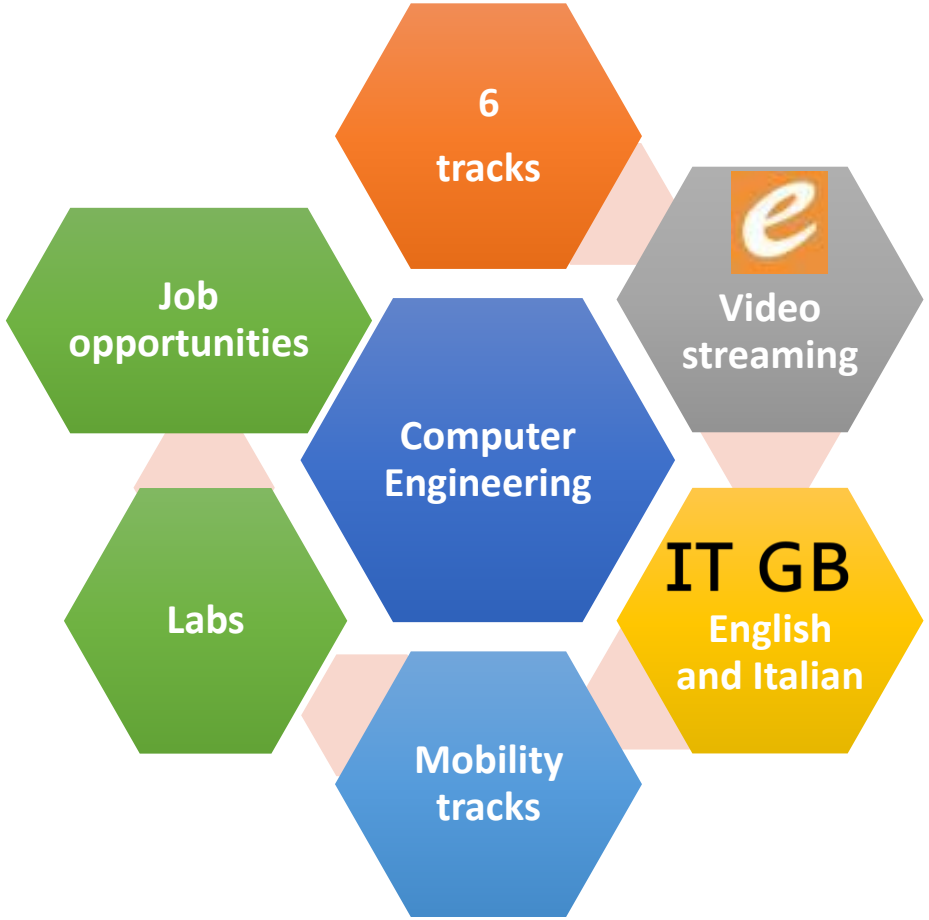


Educational goals

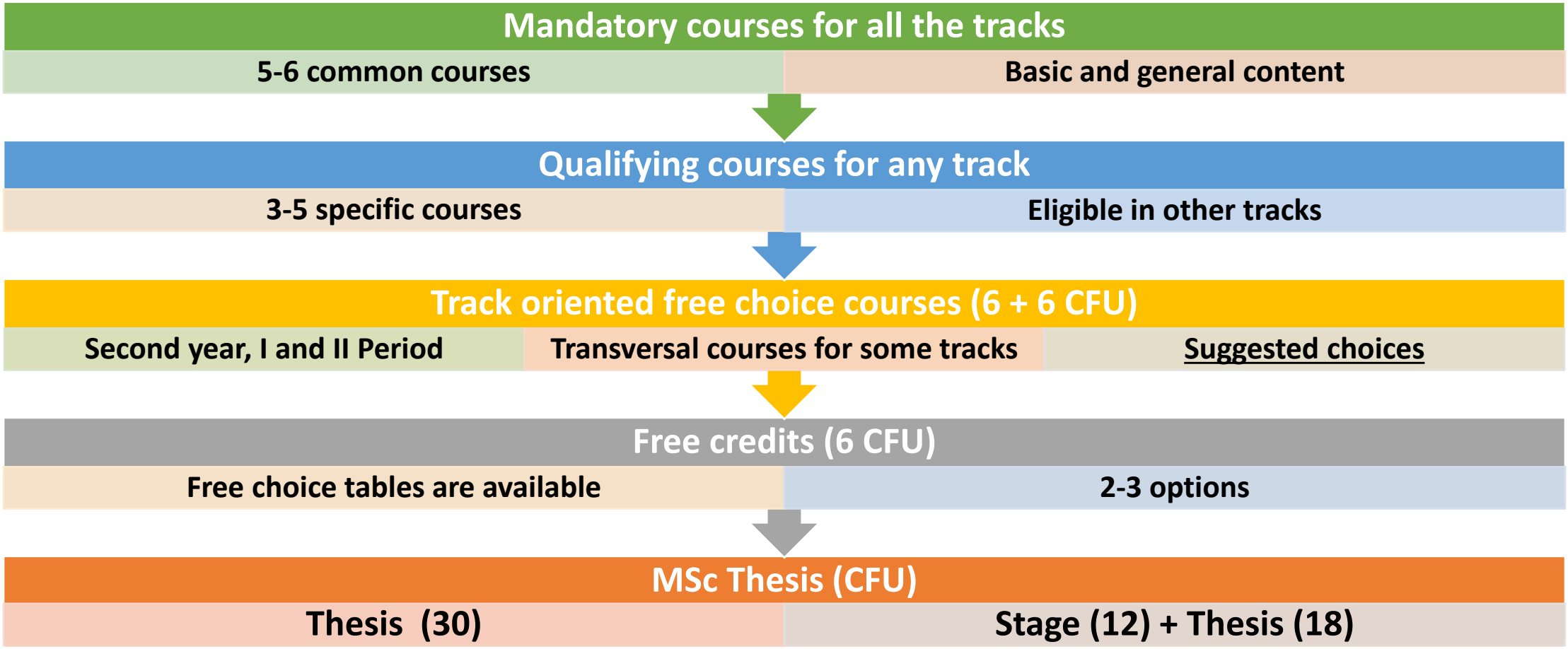
Hardware infrastructure	Operating systems	Database	Machine learning	Software design, development and maintenance
Cloud computing	Multimedia	Human-computer interface	Artificial Intelligence	Robotics
Unmanned systems	Mobile applications	IoT	Embedded Systems	Bioinformatics

Educational approach

- **Integrated Learning**
  - Combining hardware, software, networks, and user perspectives to understand complex systems holistically.
- **Systems Thinking**
  - Encouraging students to analyze and design solutions considering technical, human, and organizational dimensions.
- **Continuous Learning**
  - The curriculum is regularly updated to reflect emerging technologies and industry trends.
- **Adaptive Teaching**
  - Flexible teaching methods that evolve alongside technological advancements prepare students for real-world challenges.
- **Theory Meets Practice**
  - Courses structured around practical projects, case studies, and real-world scenarios to reinforce theoretical concepts.



Structure of the program of courses



Specialization tracks in the MSc degree in Computer Engineering

- Artificial Intelligence and Data Analytics
- Embedded & Smart Systems Design
- Computing and Network Infrastructures
- Automation and Intelligent Cyber-Physical Systems
- Graphics and Multimedia
- Software

Specialization tracks in the MSc degree in Computer Engineering

Artificial Intelligence and Data Analytics

This track provides advanced knowledge and practical skills in:

- **big data analytics**
- **machine learning**
- **computational intelligence**

to extract insights, recognize patterns, and build intelligent solutions for real-world challenges.

Specialization tracks in the MSc degree in Computer Engineering

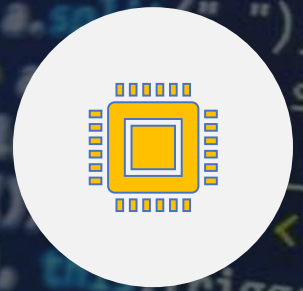
Automation and Intelligent Cyber-Physical Systems

This track provides advanced knowledge and practical skills in:

- **optimization methods**
- **control theory**
- **intelligent systems**

Students will learn to design, analyze, and implement sophisticated solutions for complex systems, including robotics.

Specialization tracks in the MSc degree in Computer Engineering



Embedded & Smart Systems Design

This track provides advanced knowledge and practical skills in:

- **embedded & IoT systems management**
- **digital system design**
- **security and safety**

Students will master embedded hardware and software, focusing on system-on-chip architectures, energy management for IoT, and cybersecurity.

Specialization tracks in the MSc degree in Computer Engineering

Graphics and Multimedia

This track provides advanced knowledge and practical skills in:

- **computer graphics**
- **image processing**
- **computer vision**
- **multimedia technologies**

Students will explore cutting-edge topics such as virtual reality and integrating machine learning techniques for multimedia applications.

Specialization tracks in the MSc degree in Computer Engineering

Computing and Network Infrastructures

This track provides advanced knowledge and practical skills in:

- **cloud computing**
- **software-defined networking**
- **web application development**

Students will gain expertise in designing, deploying, and managing scalable networking solutions.

Specialization tracks in the MSc degree in Computer Engineering

Software

This track provides advanced knowledge and practical skills in:

- **software engineering**
- **information systems**
- **application development**

Students will master software architecture and design, gaining expertise in building robust, user-centered software solutions.

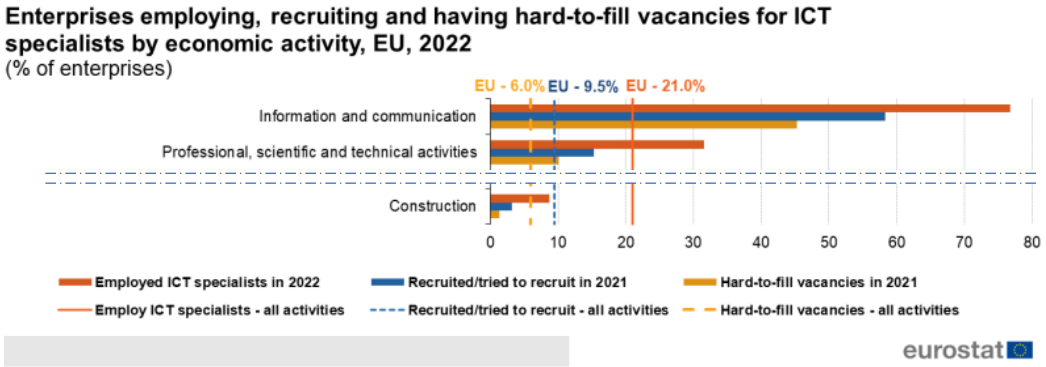
Student Mobility and Erasmus programs

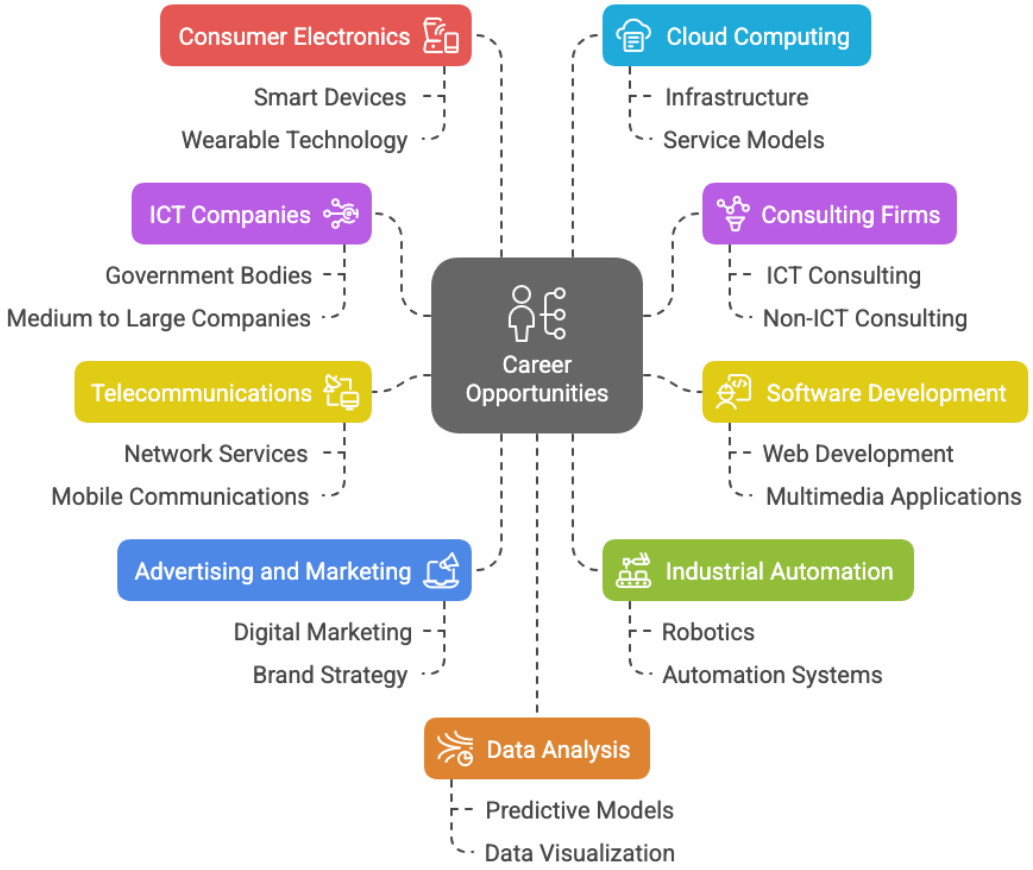
- More than 150 active agreements correspond to destinations in Europe and the world for Master Thesis, double degrees, and simple mobility programs.

Career opportunities

- MSc Computer Engineer qualification:
  - Network Systems Designer
  - Computer Graphics Designer
  - Software designer
  - Designer of industrial automation systems
  - Embedded systems designer
  - Data Analytics and Artificial Intelligence designer

The European Commission estimates that by 2030, the EU will have a shortage of 8 million ICT specialists!





What is a Ph.D.?

- The **Doctor of Philosophy (Ph.D.)** is the highest degree in the academic system

- A Ph.D. provides strong technical competencies and effective soft skills

- The Ph.D. at Politecnico di Torino lasts **three years**
- The Ph.D. period is **paid**
  - Scholarships from PoliTo, companies, research centers, PNRR, etc

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/

Coordinator
Prof. Fabrizio Lamberti
fabrizio.lamberti@polito.it

Department of Control and Computer Engineering

National Ph.D. Programme in

Artificial Intelligence - AI for Industry

- The **latest industrial revolution** focuses on integrating **digital technologies, AI**, and **robotics** into **manufacturing**. This shift is vital for improving efficiency, flexibility, and customization in production, fostering innovation, and keeping competitive in the fast-changing global market.
- An **expanding community** within a young Ph.D. program, having **99 students** enrolled over **four Ph.D. cycles**.
- **Led by Politecnico di Torino,** based in a **city** that made **history** in the automotive and manufacturing industries, the ideal **strategic hub** for promoting Industry 4.0 technologies and AI advancements in Italy.
- **17 academic and industrial partners**: Politecnico di Milano, C.N.R. - Consiglio Nazionale delle Ricerche, Università di Milano Bicocca, Università Politecnica delle Marche, Università degli Studi di Padova, Università di Venezia - Ca' Foscari, Università degli Studi di Verona, Università degli Studi di Milano, Alma Mater Studiorum Università di Bologna, Università degli Studi del Molise, Università degli Studi dell'Aquila, Università degli Studi di Genova, Università degli Studi di Torino, Università di Ferrara, INRiM - Istituto Nazionale di Ricerca Metrologica, ST Microelectronics, COMAU, EFORT, Focoos AI.

Coordinator
Prof. Stefano Di Carlo
stefano.dicarlo@polito.it

Department of Control and Computer Engineering

https://www.polito.it/en/education/phd-programmes-and-postgraduate-school/phd-programmes/artificial-intelligence

Ex-alumni


Imagination
YOGITECH
ThalesAlenia Space
i&m Ideas&Motion
Alenia Aermacchi
Avio Aero
Alcatel·Lucent Enterprise
Tiesse innovazione made in Italy
NICE
Qualcomm
Faiveley TRANSPORT
Selex ES
yelp
CRF CENTRO RICERCHE FIAT
REPLY
infineon
MAGNA
BITRON
MathWorks
THALES
Microsoft
Cisco Systems
ARM
GM
FCA FIAT CHRYSLER AUTOMOBILES
TRW Automotive
cloudera
accenture
AMADEUS
SPEA
IVECO
cadence
COMAU ROBOTICS
IBM
ENGINEERING
PRIMA INDUSTRIE
McLaren
Google
facebook
MAGNETI MARELLI
AMET
Spotify
SYNOPSYS

Politecnico di Torino

COLLEGIO ICM

Aperitivo di benvenuto

Martedì **1 aprile** 2025 H. **17:30**

2° piano Dipartimento **DAUIN**, **Corso Castelfidardo 34/d** (ingresso lato MixTo)

Occasione perfetta per fare nuove conoscenze, scoprire i laboratori del collegio ICM ed incontrare i docenti dei relativi corsi di studio!

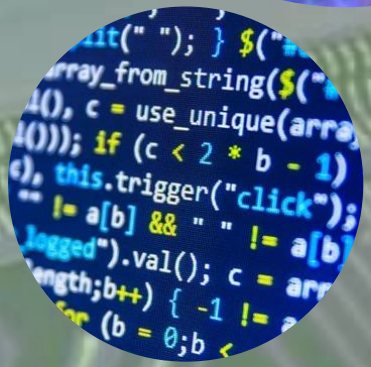
Thanks for your attention!

Telegram group

https://t.me/LMIngInF

Contacts

referente.lm.inf@polito.it



Ph.D. Programmes at DAUIN in
COMPUTER AND CONTROL ENGINEERING
ARTIFICIAL INTELLIGENCE

Prof. Valentina Gatteschi

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What does a Ph.D. student do and learn?

1. **Research** under the guidance of a **supervisor**

   - Understanding problems and scenarios
   - Getting to know the state of the art
   - Devising ideas
   - Validating them experimentally
   - Writing papers & technical documents
   - Presenting results at international conferences and events

What does a Ph.D. student do and learn?

2. **Interaction** and **collaboration** with

- The local research **group** of the supervisor
- Other Ph.D. students of Politecnico and worldwide (e.g., in summer/winter schools)
- **Companies** (e.g., during project and joint activies), which often fund a significant number of the available scholarships
- Other **researchers** worldwide (e.g., during conferences, research periods abroad)

What does a Ph.D. student do and learn?

3. **Hard skills** and **soft skills** with

   - Catalogue of courses, on-site and off-site
   - 100+40 hours over the three years to prepare for the labour market

What does a Ph.D. student do and learn?

More importantly, the Ph.D. student acquires the **mindset** to master the most advanced technologies

Bachelor student

Master student

Ph.D. student

What's next?

- **Academia and research centers** worldwide
  - PhD degree is a must to become a researcher/professor
- **Companies** as R&D highly-trained staff and future manager
  - Some high-level positions are reserved for workers with a PhD degree
  - 30-40% higher salary expected in mid-term with a PhD
- **Startup(per)s**: bring results of PhD research to the market
  - Major opportunities available @ PoliTo

Ph.D. Programme in

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National Ph.D. Programme in

Artificial Intelligence

National PhD programs are an effort of the Italian Ministry of University to create programs that cross the boundary of a single university enabling PhD candidates to benefit from the knowledge and the facilities of the top AI scientists in the country. The importance and broadness of the topic led to the creation of 5 federated national programs.

AI for Health and Life Sciences

- Illness and patient outcome prediction
- Bio-robotics
- Neuro-inspired AI
- Bioinformatics
- Precision medicine

AI for Industry

- Virtual factory
- Predictive maintenance
- Zero-defect manufacturing
- Supply chain and logistics
- Predictive analysis for retail

AI for Security

- Cyber-intelligence
- Cyber-security
- Cyber-defense
- Cyber-risk

AI for Environment and Agriculture

- Precision farming
- Food safety and traceability
- Geo-analytics
- Ecological modeling
- Biosensors

AI for Society

- Human-centric AI
- Explainable AI
- Personal assistance
- AI for social interaction
- AI for social good

AI Ethics	Data Science	Social Impact of AI	Quantum AI	Knowledge representation	Multi-agent systems	Distributed intelligence	Data mining	Knowledge discovery	Complex networks	Planning	Explainability
Computer vision	Pattern recognition	Deep learning	Human-machine interaction	Game theory	Natural language processing	Distributed AI	Computational intelligence	Fuzzy logic	Statistics	Robotics	Machine learning

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