

SALONE DELL'ORIENTAMENTO 2026

CORSO DI LAUREA MAGISTRALE

INGEGNERIA INFORMATICA

COMPUTER ENGINEERING

EMBEDDED & SMART SYSTEM DESIGN

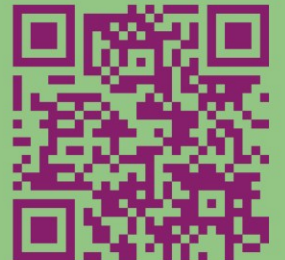
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**Politecnico
di Torino**

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



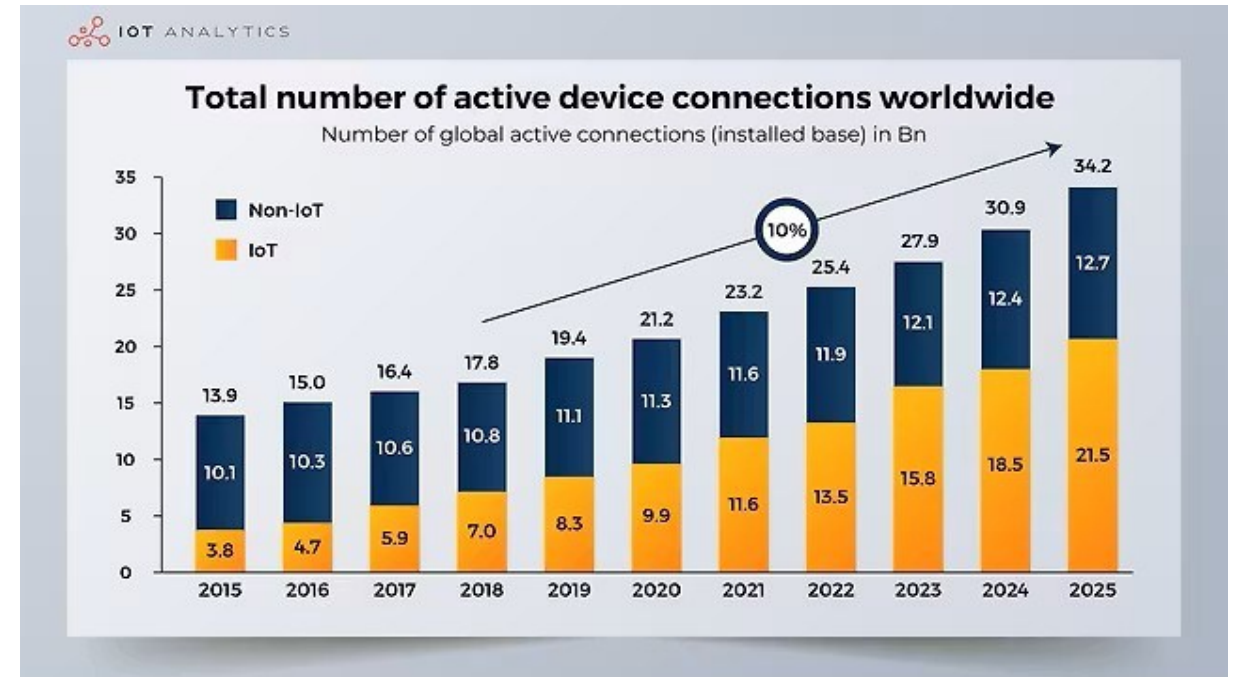
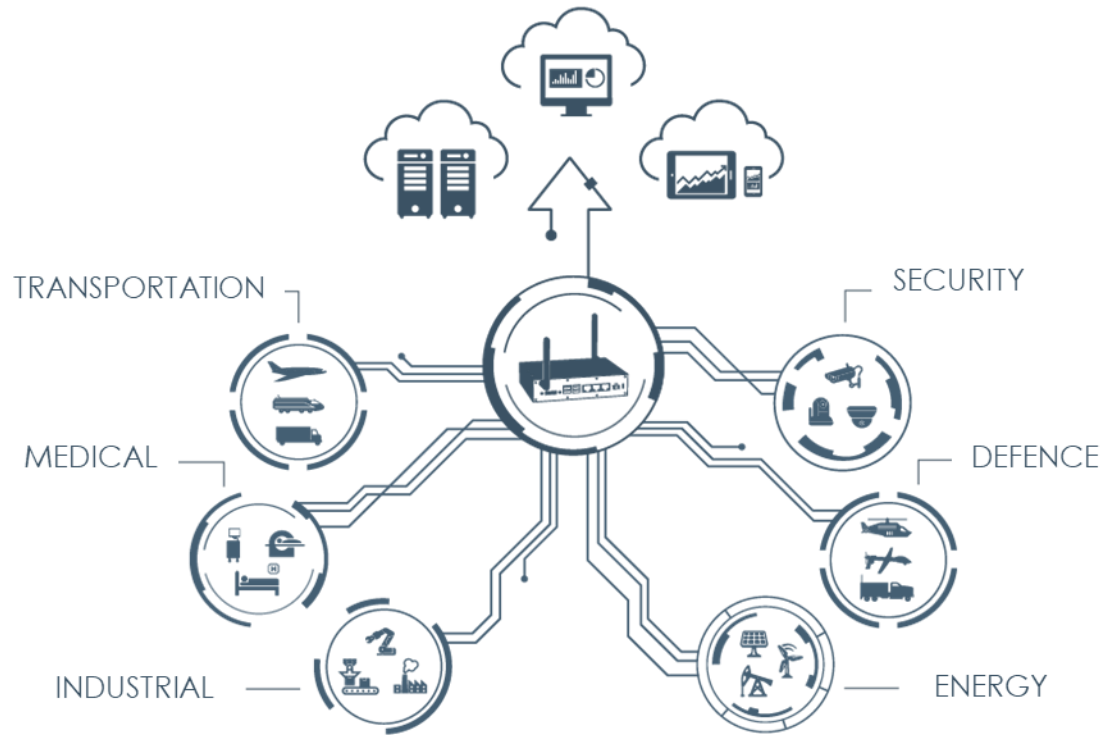
Embedded & Smart Systems (ESSs)

A combination of heterogenous **computing** units, **memories**, and input/output **peripherals** (i.e., sensors/actuators)

- **embedded** into a larger mechanical or electronic system
- **dedicated** to specific tasks and applications

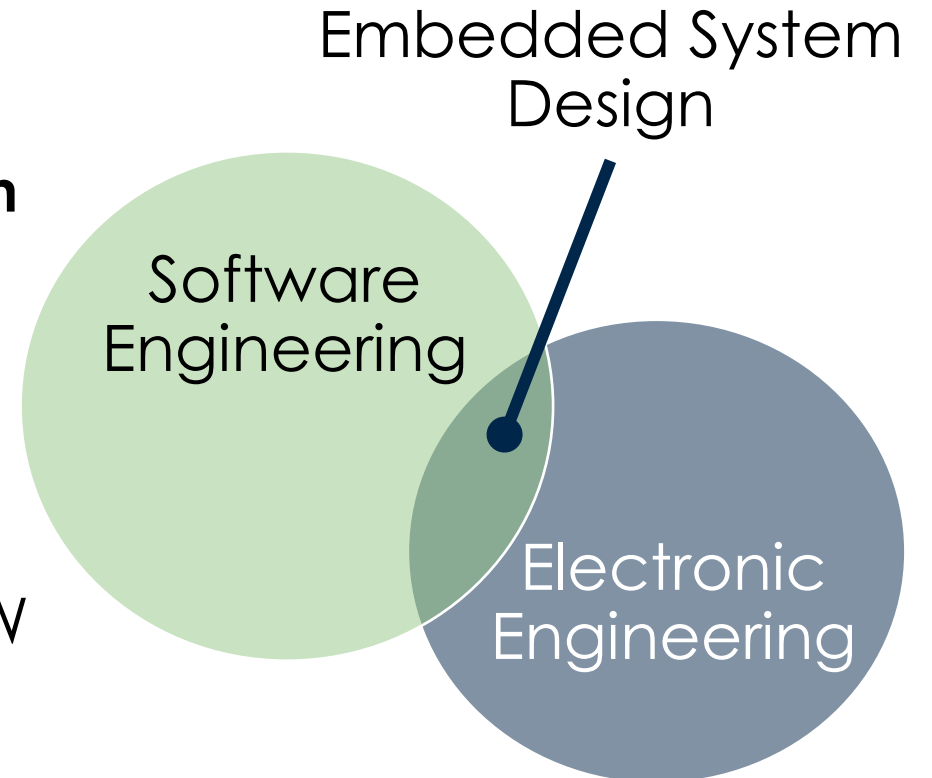


Embedded Systems are everywhere!

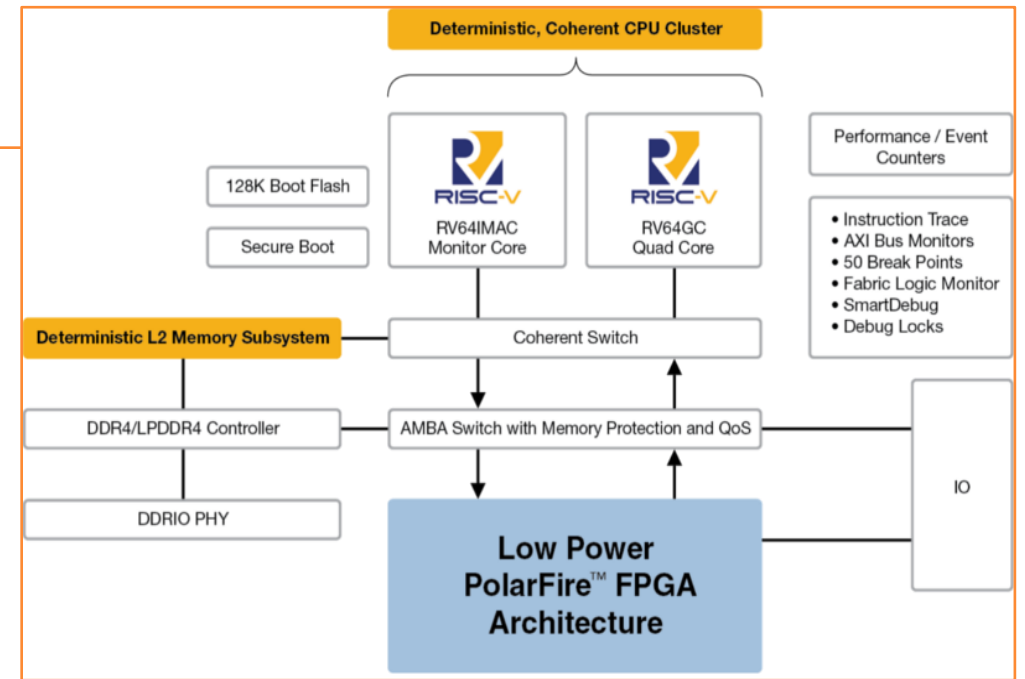
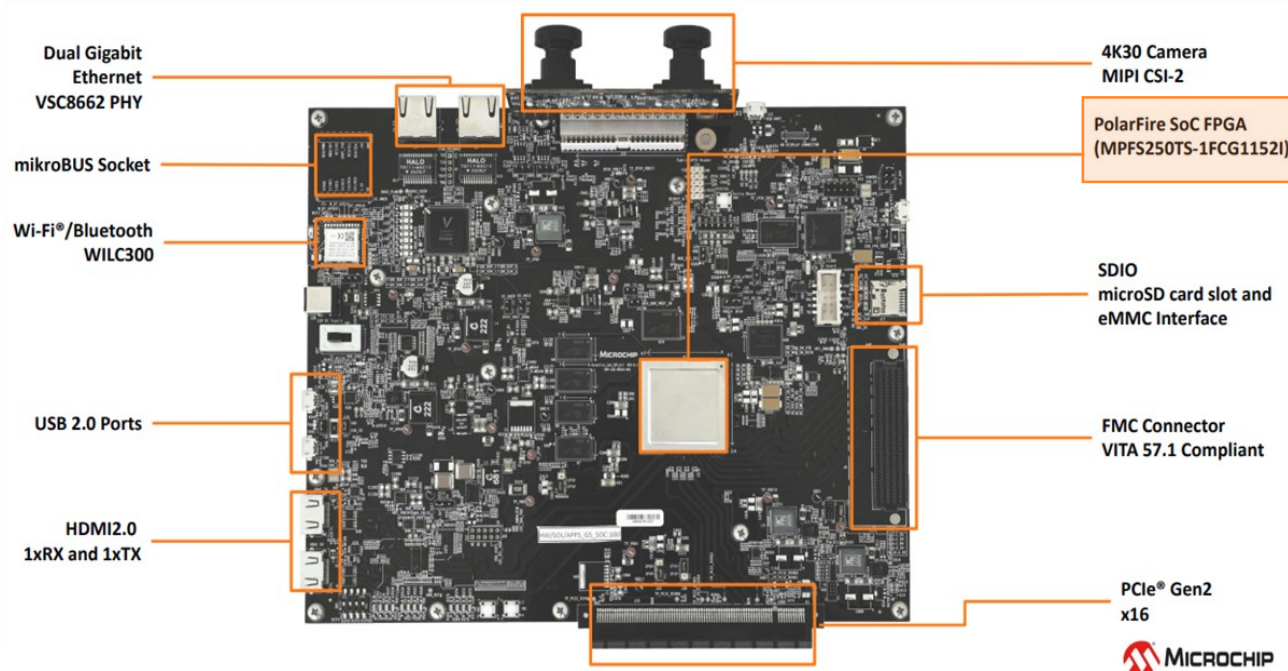


Beyond common computers

- Tight extra-functional constraints
 - High **reliability** and **dependability**
 - High **speed** (real-time) and high **precision**
 - Limited **energy** and **power** budget
 - High **security**
 - Small **form factor**
- Where dedicated SW and dedicated HW flow into each other



Playground



Objective: Master the HW-SW co-design flow

- Programming
 - Software
 - Operating systems deployment and customization
 - Firmware development
 - Applications development (e.g., DSP, ML/AI, crypto)
 - Hardware (digital)
 - System specifications (ASIC/FPGA)
 - Verification
- Optimization
 - Power, Performance and Area (PPA)
 - Testability, safety, security

Hard Skills

Python
C/C++
RTOSs
Software Management
VHDL/Verilog
EDA Tools
IPs & SoC Architectures
Basic Electronic

Study plan

THESIS | 30 ECTS

Final project (30)
OR
Internship (12) + Final project (18)

ELECTIVE COURSES | 2x6 OR 6+8 ECTS

Challenge (8)

MAIN THEMES

Internet-of-Things

Network & communication

AI & ML

Parallel computing

MAIN COURSES | 78 ECTS

Energy management for IoT 6 CFU

Testing and fault tolerance 6 CFU

Cybersecurity for embedded systems 6 CFU

Software engineering 8 CFU

Embedded OS and architectures 8 CFU

Computer architectures 10 CFU

Synthesis & optimization of digital systems 6 CFU

Specification & simulation of digital systems 6 CFU

System-on-chip architecture 6 CFU

Electronics for embedded systems 10 CFU

Microelectronic systems 6 CFU

Course features



Taught in English



Interaction with intl. students



Hands-on approach



Erasmus

Semester or
Thesis abroad



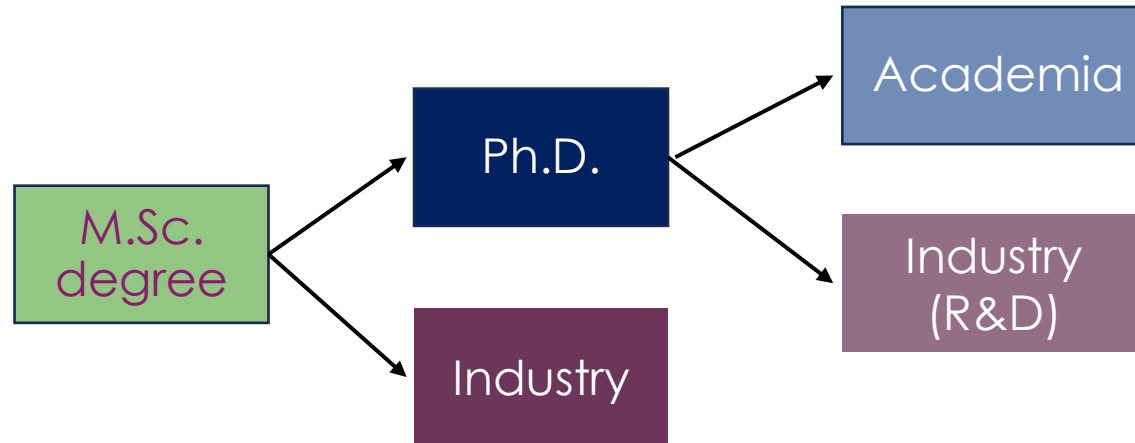
Double degree programs

EURECOM (EU - Fr)
TOP-UIC (USA)



**Connection with
companies & universities**

Job profiles



Embedded Software Engineer

- design, implement, and test at the SW application level

Firmware Engineer

- develop, optimize and test routines and procedures to control/manage the functionality of embedded devices

Embedded Systems Architect

- design and optimize the system architecture, including dedicated hardware and software components

Embedded Systems Test Engineer

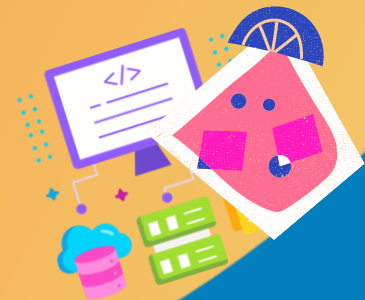
- design, implement and run on-/off-chip testing routines for hardware and software parts



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#TOMORROW STARTS TODAY



Aperitivo di Benvenuto

Venerdì **27 Marzo** 2026

H. **17:30**

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

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