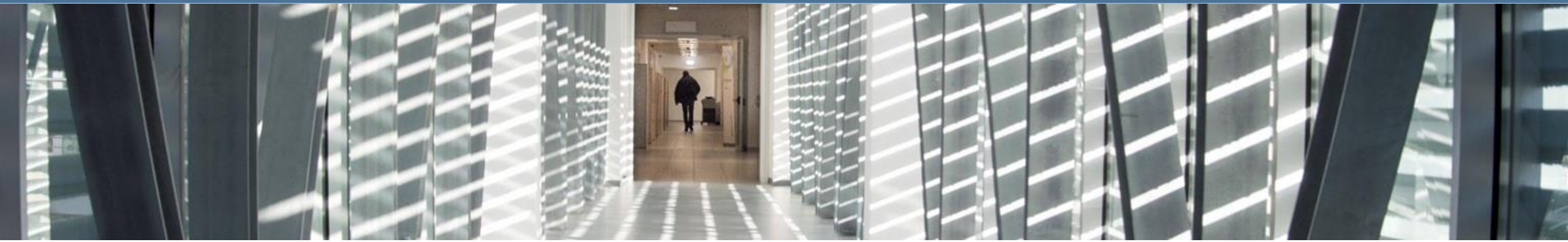
UNIVERSITÀ DI TRENTO

DEPARTMENT OF

INFORMATION ENGINEERING AND COMPUTER SCIENCE



LM Information Engineering

LM Ingegneria dell'Informazione

Responsabile CdS: Giulia Boato giulia.boato@unitn.it

AY/AA 2024/2025

UNIVERSITÀ DI TRENTO

DEPARTMENT OF

INFORMATION ENGINEERING AND COMPUTER SCIENCE

LM Information Engineering

LM Ingegneria dell'Informazione

Responsabile CdS: Giulia Boato giulia.boato@unitn.it

AY/AA 2024/2025

LM Information Engineering

It is thought of as a **natural continuation** and **1-1 match** with our **ICE*** bachelor degree

* Ingegneria Informatica, delle Comunicazioni, Elettronica

UniTrentoDISI YouTube - Presentation of the Master's Degree in Information Engineering

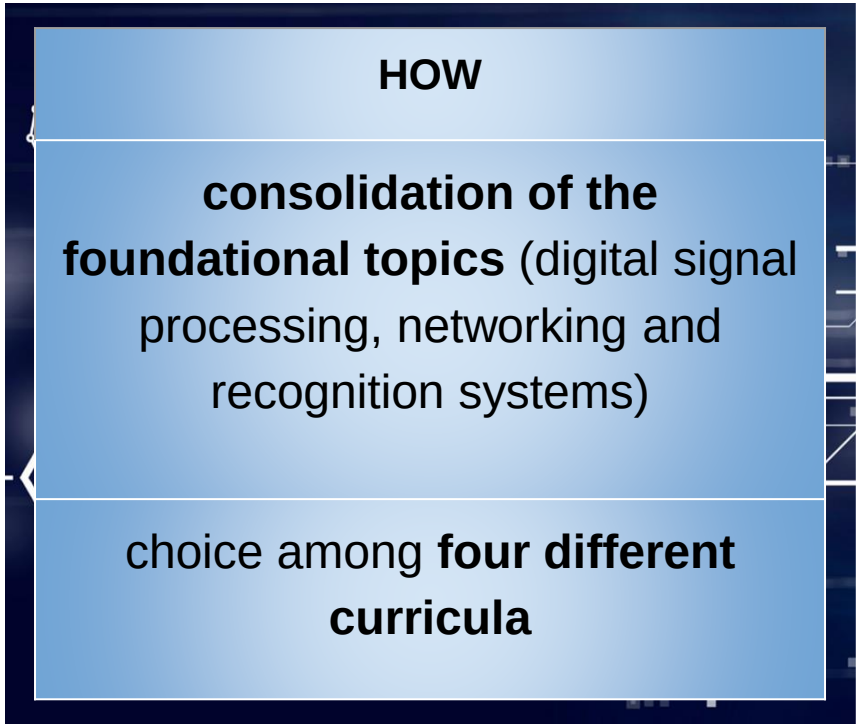
LM Information Engineering – specific learning objectives

Graduates in Information Engineering learn:

- **to conceive, design and manage complex systems**
- **a broad set of skills in interdisciplinary application contexts**

thanks to a **solid technical and scientific knowledge** in the area of IE:

- knowledge of the most advanced methodologies and tools for the design of **acquisition, transmission and processing** systems for **heterogeneous signals and data**
- ability to design, engineer and manage **intelligent systems**
- solid command of **engineering methodologies** to understand the limits and criticalities of a system
- capability to understand how to implement **technology transfer and business management**



LM Information Engineering – innovative teaching paradigms

- **lectures and laboratory activities for a hands-on application** of the theoretical aspects: frontal lectures, laboratory activities
- promoting the **participation of companies and industries**: thematic seminars, internship, supporting projects
- **experiencing real-world problems**
- **challenge-based learning**
- new focus on **soft-skills**, essential feature for a successful professional figure

LM Information Engineering – training paths

- Mandatory (36+6 CFU)
- Specialization (30 CFU)
- Free Choice (18 CFU)
- Internship and Thesis (30 CFU)

LM Information Engineering – training paths

- Digital Signal Processing (12 CFU)
- Networking (12 CFU)
- Recognition Systems (12 CFU)
- Innovation and Business in ICT (or Industry Challenges) (6 CFU)

Mandatory (42 CFU)

Mandatory (36+6 CFU)

Specialization (30 CFU)

Free Choice (18 CFU)

Internship and Thesis (30 CFU)

LM Information Engineering – training paths

- Computer Engineering
- Communications Engineering
- Electronics Engineering
- Biomedical Engineering

4 Specialization - (30 CFU)

Mandatory (36+6 CFU)

Specialization (30 CFU)

Free Choice (18 CFU)

Internship and Thesis (30 CFU)

LM Information Engineering – training paths

- ***Multimedia Data Security (6 CFU)***
- ***Computer Vision (6 CFU)***
- Computer Graphics *(6 CFU)*
- Distributed Systems *(6 CFU)*
- Service Design and Engineering *(6 CFU)*
- Fog and Cloud Computing *(6 CFU)*
- Blockchain *(6 CFU)*
- Deep Learning *(6 CFU)*

Specialization **Computer Engineering** (30 CFU)

Mandatory (36+6 CFU)

Specialization (30 CFU)

Free Choice (18 CFU)

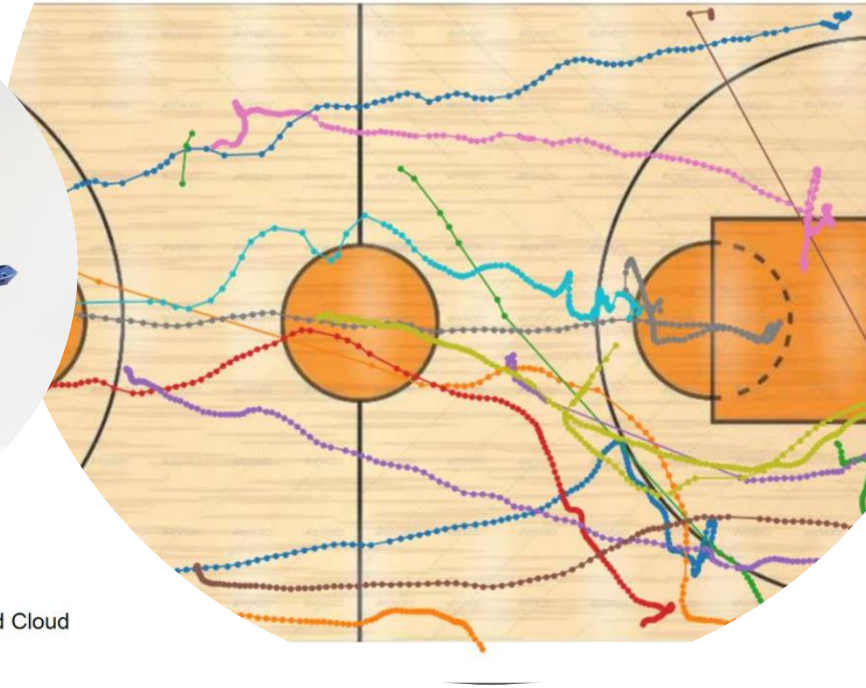
Internship and Thesis (30 CFU)

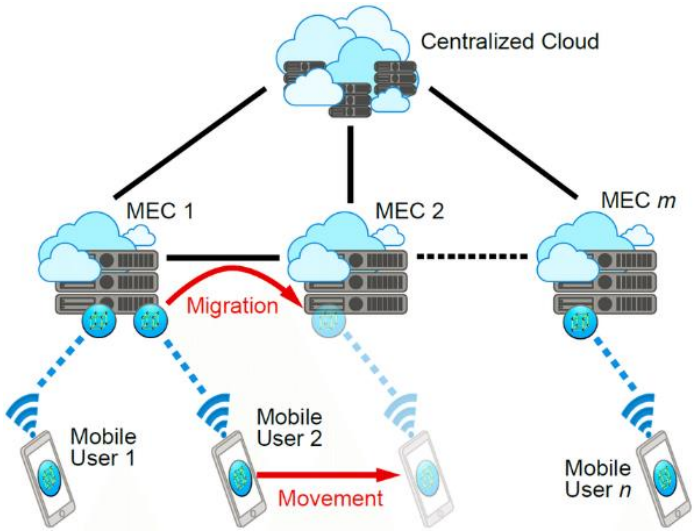
UNIVERSITÀ DI TRENTO
Dipartimento di Ingegneria e Scienza dell'Informazione

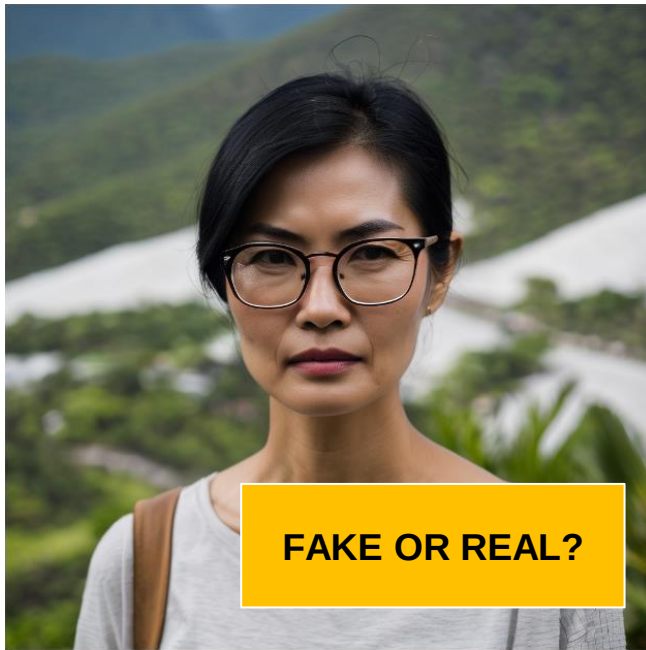
LM Information Engineering

Computer Engineering

- Video Surveillance
- Human Pose analysis
- VR and Simulation
- Deepfake Detection
- AI for security
- Advanced Computing







LM Information Engineering – training paths

- ***Introduction to Computer and Network Security / Network Security (6 CFU)***
- Simulation and Performance Evaluation (6 CFU)
- Communication Systems *(6 CFU)*
- Radar and radiolocalization *(6 CFU)*
- Advanced remote sensing systems *(6 CFU)*
- Wireless Networking and Localization *(6 CFU)*

Specialization **Communications Engineering** (30 CFU)

Mandatory (36+6 CFU)

Specialization (30 CFU)

Free Choice (18 CFU)

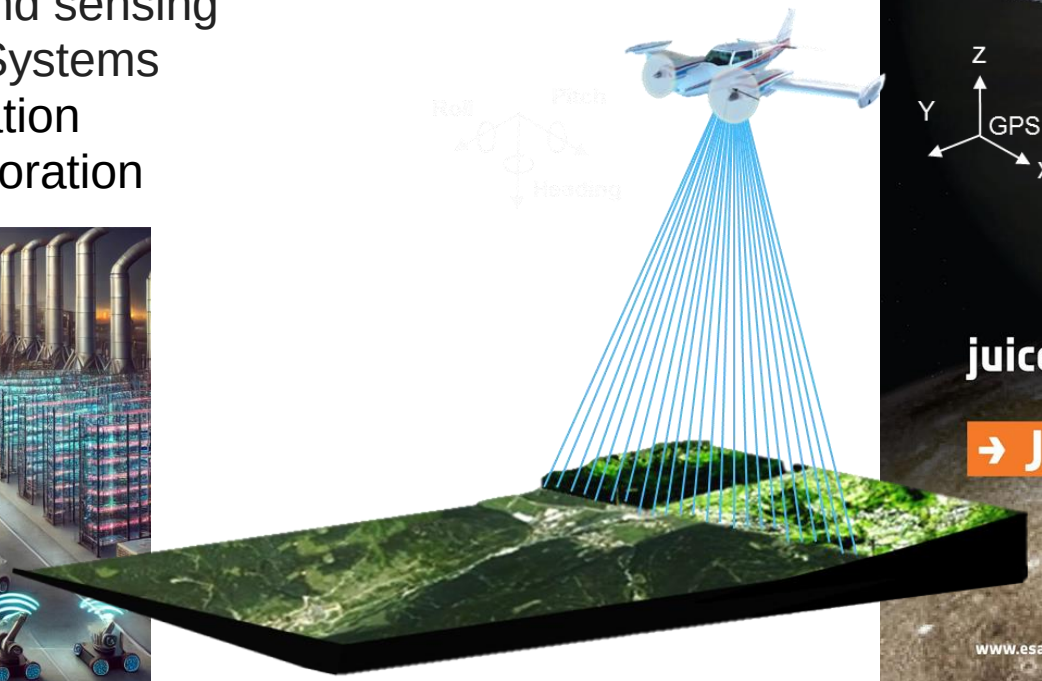
Internship and Thesis (30 CFU)

UNIVERSITÀ DI TRENTO | Dipartimento di Ingegneria e Scienza dell'Informazione

LM Information Engineering

Communications Engineering

- Wireless & Mobile Networks
- Sustainable ICT infrastructure
- Localization and sensing
- Autonomous Systems
- Earth Observation
- Planetary exploration



LM Information Engineering – training paths

- ***Analog Electronic Systems (6 CFU)***
- ***Low-power wireless networking for IoT (6 CFU)***
- GPU Computing *(6 CFU)*
- Advanced computing architectures *(6 CFU)*
- High Performance Computing *(6 CFU)*
- Low-power Embedded Systems *(6 CFU)*
- Microelectronic devices, sensors and MEMS *(6 CFU)*

Specialization **Electronic Engineering** (30 CFU)

Mandatory (36+6 CFU)

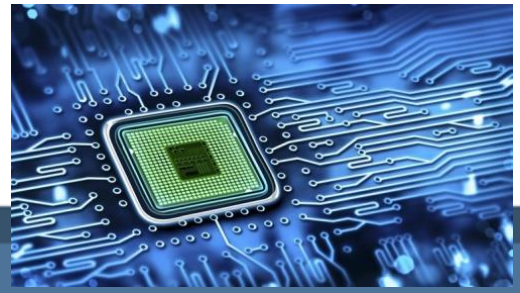
Specialization (30 CFU)

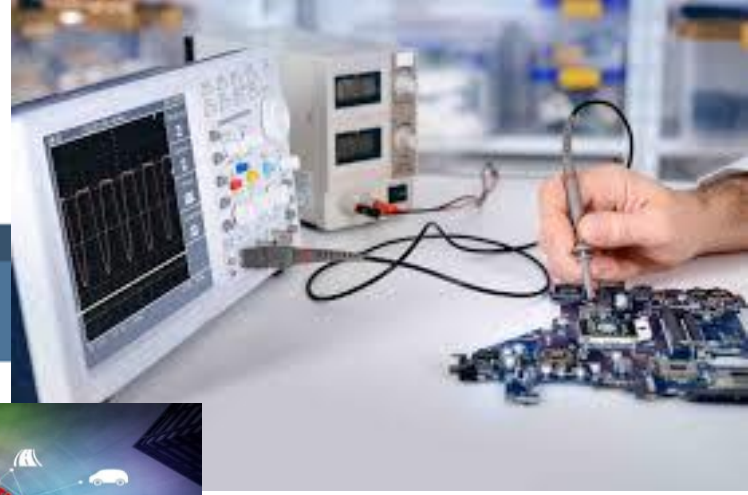
Free Choice (18 CFU)

Internship and Thesis (30 CFU)

UNIVERSITÀ DI TRENTO | Dipartimento di Ingegneria e Scienza dell'Informazione

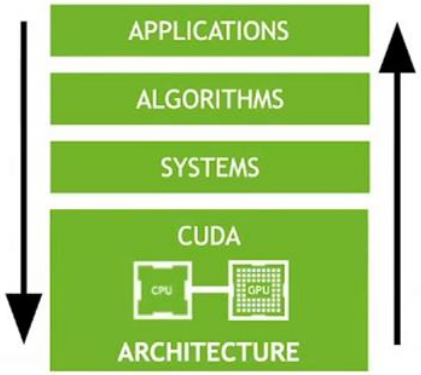
LM Information Engineering

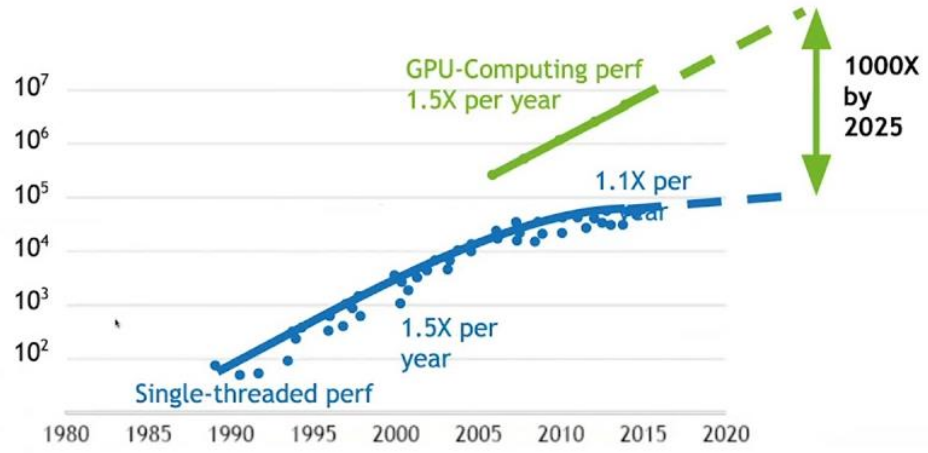




Electronics and computing architectures

- Computing Architectures and GPU
- Sensors
- Microelectronic Devices
- Low-power Embedded Systems
- Electromagnetic safety and security





LM Information Engineering – training paths

- ***Fundamentals of Biomedical Imaging (12 CFU)***
- ***Ultrasound Medical Imaging (6 CFU)***
- Digital Health Systems *(6 CFU)*
- Robotics for Biomedical Engineering *(6 CFU)*
- Digital Epidemiology *(6 CFU)*
- Sport Tech *(6 CFU)*

Specialization **Biomedical Engineering** (30 CFU)

Mandatory (36+6 CFU)

Specialization (30 CFU)

Free Choice (18 CFU)

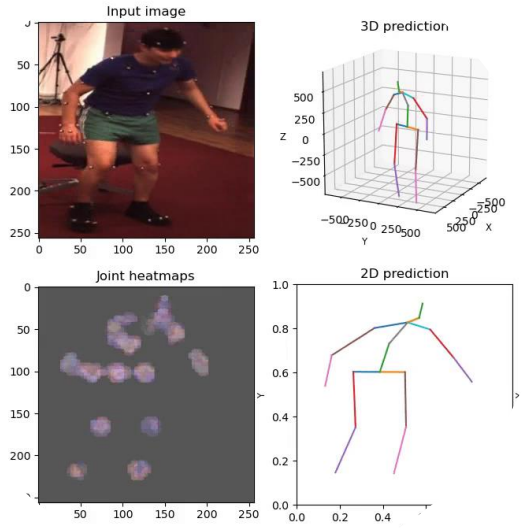
Internship and Thesis (30 CFU)

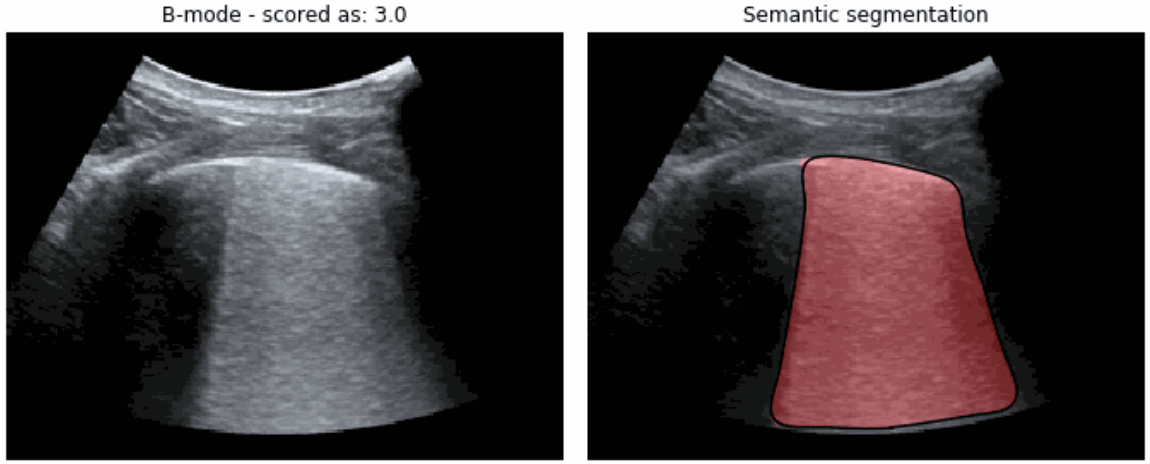
UNIVERSITÀ DI TRENTO | Dipartimento di Ingegneria e Scienza dell'Informazione

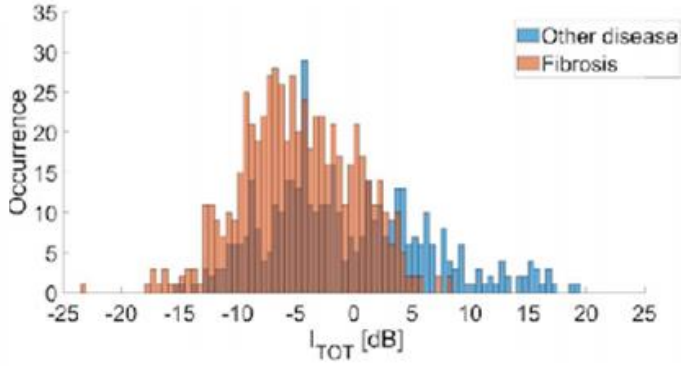
LM Information Engineering

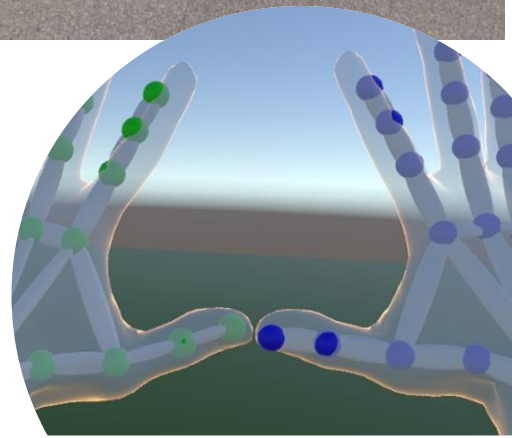
Biomedical Engineering

- Biosignal Analysis
- Biomedical Imaging (Cancer, Brain, Vascular)
- Ultrasound Localization Microscopy
- High Tech for Hospitals & Doctors
- High Tech for Sport









LM Information Engineering – training paths

- All courses offered by DISI accepted with no problems
- Courses offered by other departments needs a justification and are subject to approval by the CdS responsible
- Possible suggestions: keep all courses in your specialization or select a "secondary specialization" with 3 courses

Free Choice (18 CFU)

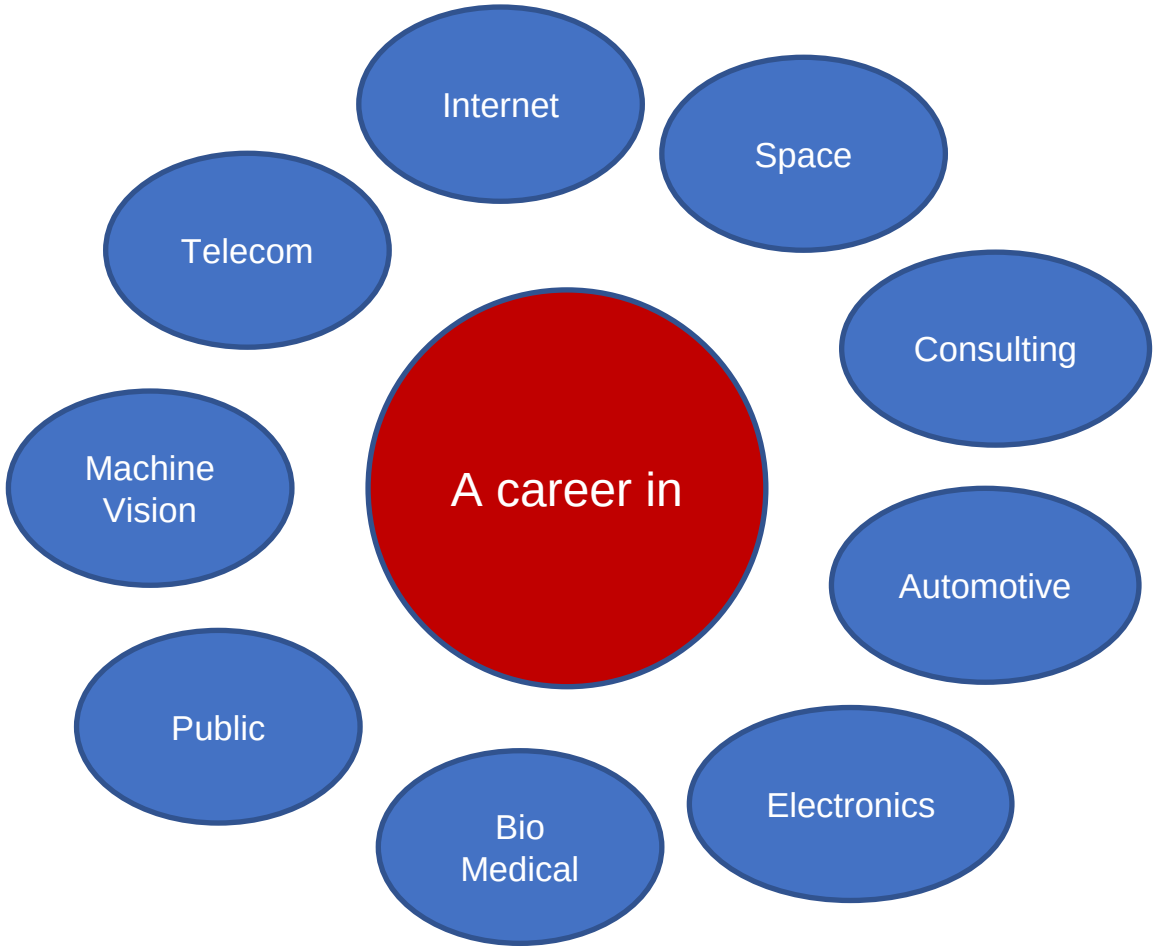
Mandatory (36+6 CFU)

Specialization (30 CFU)

Free Choice (18 CFU)

Internship and Thesis (30 CFU)

LM Information Engineering – employment opportunities



91% graduates occupied with a job in 1 year from graduation

Updated at 11/12/2024
source: AlmaLaurea

LM Information Engineering – employment opportunities

The skills acquired guarantee employability in a wide range of areas, including industry sector and research-oriented positions in institutes or academia.

A non-exhaustive list includes the following fields:

- companies in the areas of research and development, engineering, production and marketing of **products and services in the fields of telecommunications, networks, signal processing, electronics, information technology and biomedical engineering**
- companies operating in domains that need skills for the **development and use of communication systems and infrastructures and data and signal processing** to support internal organisation, production and marketing
- companies dealing with **design, supply and maintenance of services provided via telematic networks, sensor networks, distributed architectures and the Internet**
- companies **supplying structures and services for IT systems and networks**
- **research and development** centres, both public and private.

LM Information Engineering – enrollment

To be admitted to the two-year Master's degree in Information Engineering applicants need to have a **Bachelor degree** and to match **specific academic requirements**, including a minimum upper-intermediate level of English (**Level B2**).

There is **no longer a limited enrolment for EU citizens.**

Limitations apply **only** for non-EU.

LM Information Engineering - useful info and links

Giulia Boato

- giulia.boato@unitn.it [coordinator]

EDU DISI

- edu.disi@unitn.it [general inquiries about the course]

Supporto Studenti Povo

- supportostudentipovo@unitn.it [study plan, issues with Esse3]

Prof. Claudio Sacchi

- claudio.sacchi@unitn.it [variations in your study plan]

Master's degree webpage (ENG)
Ordinamento (ITA)
Rules, regulations, and manifesti (ENG/ITA)