Master's Degree In **Computer Engineering**

UNIVERSITÀ
DEGLI STUDI
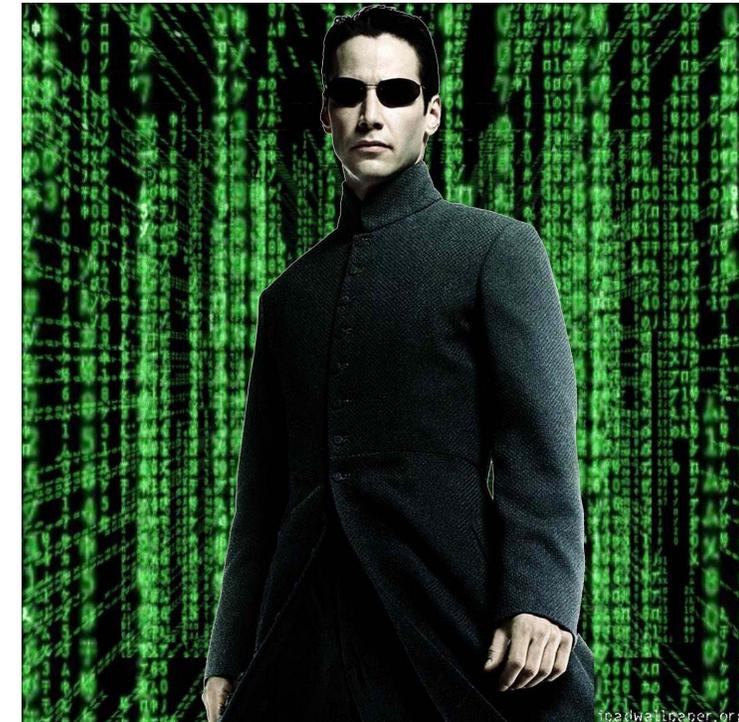DI PADOVA

Excellence in Research

Industrial Synergies
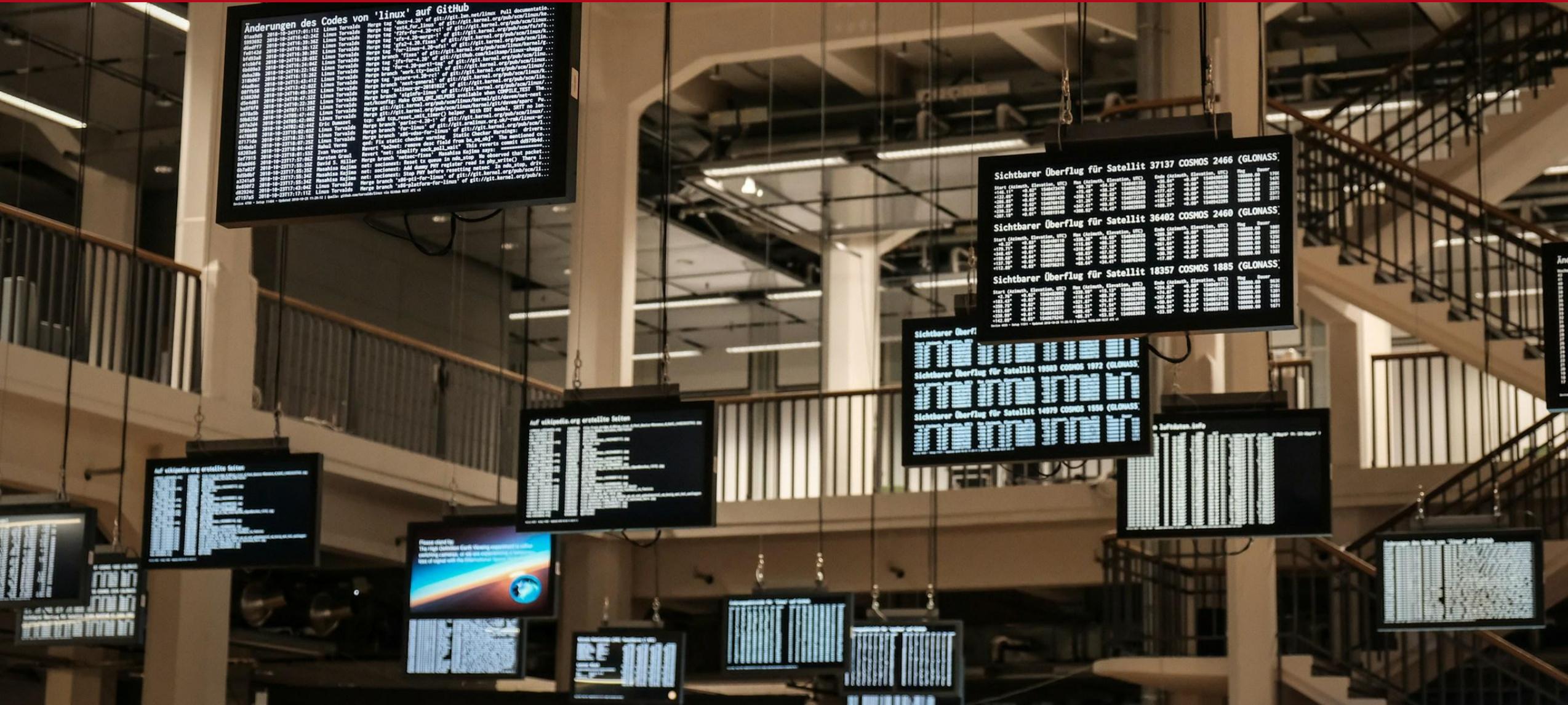
Study Plan Students' Autonomy
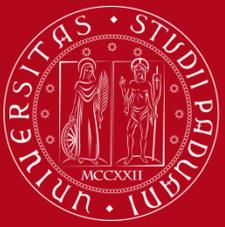
Training a professional figure able to:

- ✓ deliver core engineering competencies and advanced computer science expertise
- ✓ promote technological innovation in the field of computer engineering and related disciplines
- ✓ adapt to its rapid developments
- ✓ easily interact with other engineering sectors and disciplines and operate in different application and industry areas
- ✓ be ready for pursuing a research career in academia or industry
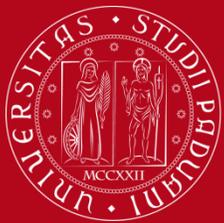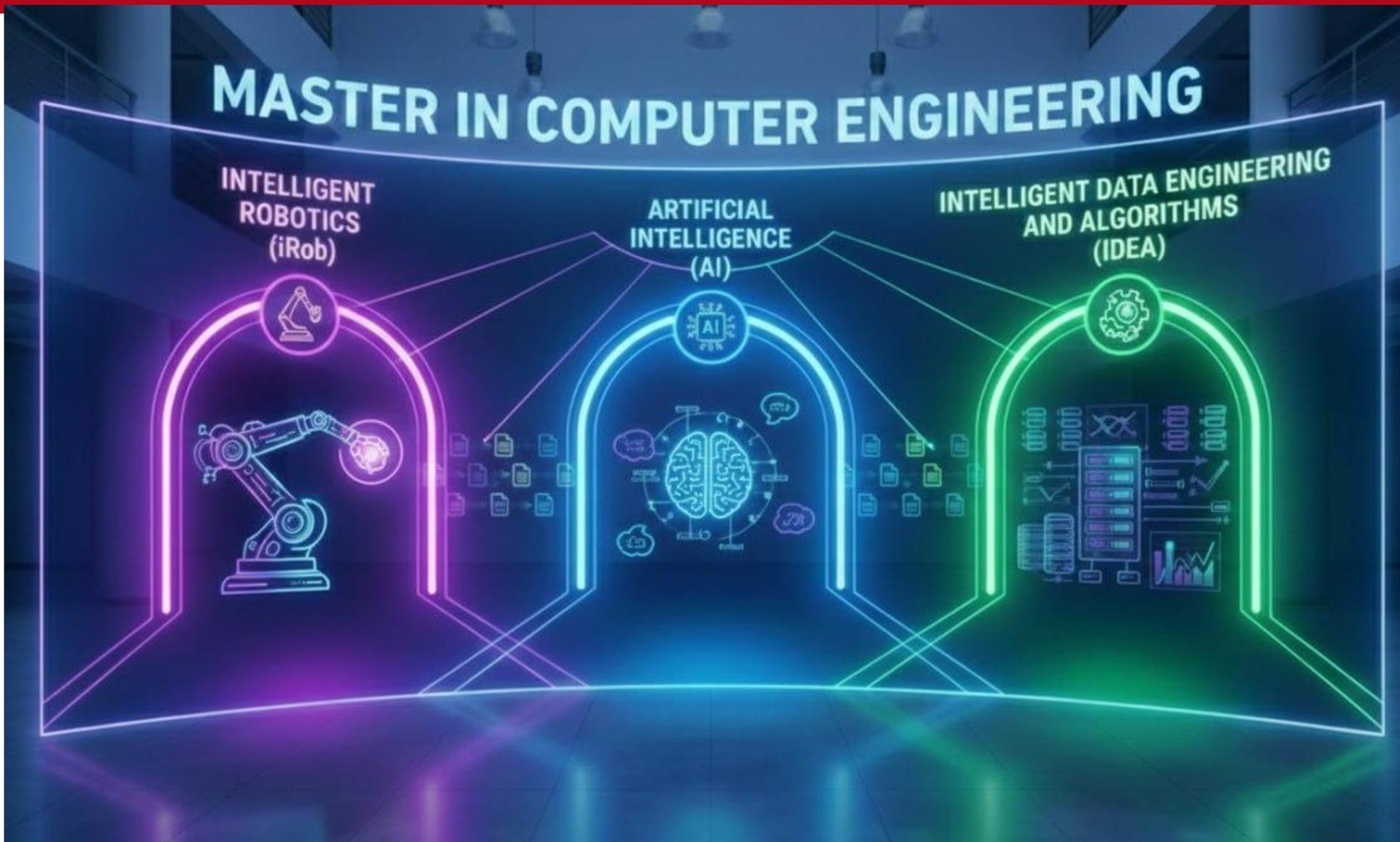
	UNIPD	Italy
Occupation Rate	100.00%	96.00%
Net Monthly Salary	2,540€	2,198 €
PhD	20.00%	14.10%

Source: Almaviva 2024, https://www.almalaurea.it/i-dati/le-nostre-indagini/condizione-occupazionale-laureati

✓ Hands-on experience

- Homeworks
- Laboratories
- Projects

✓ Interdisciplinary topics

✓ Soft skills: communication, teamwork, problem solving, critical thinking,…

MANDATORY COURSES (57 ECTS)

Course	ECTS	Period
Automata, Languages and Computation	6	Y1.S1
Foundations of Artificial Intelligence	9	Y1.S1
Machine Learning	9	Y1.S1
Deep Learning	6	Y1.S2
High-Performance Computing	6	Y1.S2
Computer Vision	9	Y1.S2
Reinforcement Learning	6	Y2.S1
Natural Language Processing	6	Y2.S1

OTHER ACTIVITIES

Activity	ECTS	Period
English Language/Italian Language	3	
Internship/Research Training	9	Y2
Final Project	21	Y2

ELECTIVE COURSES (At Least 18 ECTS)

Course	ECTS	Period
Recommender Systems	6	Y1.S2
Computational Creativity, Music Computing and multimedia technology	6	Y1.S2
Agentic Artificial Intelligence for Information Access	6	Y2.S1
Learning from Networks	6	Y2.S1
Autonomous Robotics	6	Y2.S1

OTHER CHOICES (At Least 12 ECTS)

Course	ECTS	Period
Operations Research 1	9	Y1.S1
Quality Engineering	6	Y1.S1
Innovation, entrepreneurship and finance	6	Y1.S1
Digital Circuits for Neural Networks	9	Y1.S2
Machine Learning Systems	6	Y2.S1
Responsible Artificial Intelligence	6	Y2.S2
Operations Research 2	6	Y2.S2

✓ The AI@DEI Pathway also offers the opportunity to earn micro-credentials, i.e. academic certifications for advanced and targeted competences in specific areas of AI, as an additional and cross-cutting specialization

✓ Micro-credentials enable students to enhance their academic journey beyond the 120 ECTS credits required for graduation, strengthening their professional profile with clearly identifiable and internationally relevant skills

✓ Students achieve micro-credentials by attending courses of the other Master programs part of AI@DEI Pathway

MICRO-CREDENTIALS		
Course	ECTS	Period
Bioingegneria (BIO)		
Biomedical wearable technologies for healthcare and wellbeing	6	Y1.S2
Decision Support System for healthcare	6	Y2.S2
Control Systems Engineering (CSE)		
Industrial and edge machine-learning	6	Y2.S1
Visual-Language-Action models for robotics	6	Y2.S2
ICT for Internet and Multimedia (ICT)		
Digital Forensics and Biometrics	6	Y2.S1
Machine Learning for Human Data	6	Y2.S1

MANDATORY COURSES (57 ECTS)

Course	ECTS	Period
Foundations of Artificial Intelligence	9	Y1.S1
Machine Learning	9	Y1.S1
Computer Vision	9	Y1.S2
Reinforcement Learning	6	Y2.S1
Autonomous Robotics	9	Y2.S1
Industrial Robotics	9	Y2.S1
3D Vision	6	Y2.S2

ELECTIVE COURSES (At Least 18 ECTS)

Course	ECTS	Period
Automata, Languages and Computation	6	Y1.S1
Industrial Automation	9	Y1.S1
Deep Learning	6	Y1.S2
Robotics and Control	9	Y1.S2
Natural Language Processing	6	Y2.S1
Neurorobotics	6	Y2.S1
Mobile and Network Robotics	9	Y2.S1
Embedded Real-time Control	6	Y2.S1
Human-Robot Interaction	6	Y2.S2

OTHER CHOICES (At Least 12 ECTS)

Course	ECTS	Period
Quality Engineering	6	Y1.S1
Innovation, Entrepreneurship and Finance	6	Y1.S1
Sensing and Measurement Systems	9	Y2.S1
Distributed Systems	6	Y2.S1
Game Theory	6	Y2.S1
Operations Research 2	6	Y2.S2

OTHER ACTIVITIES

Activity	ECTS	Period
English Language/Italian Language	3	
Internship/Research Training	9	Y2
Final Project	21	Y2
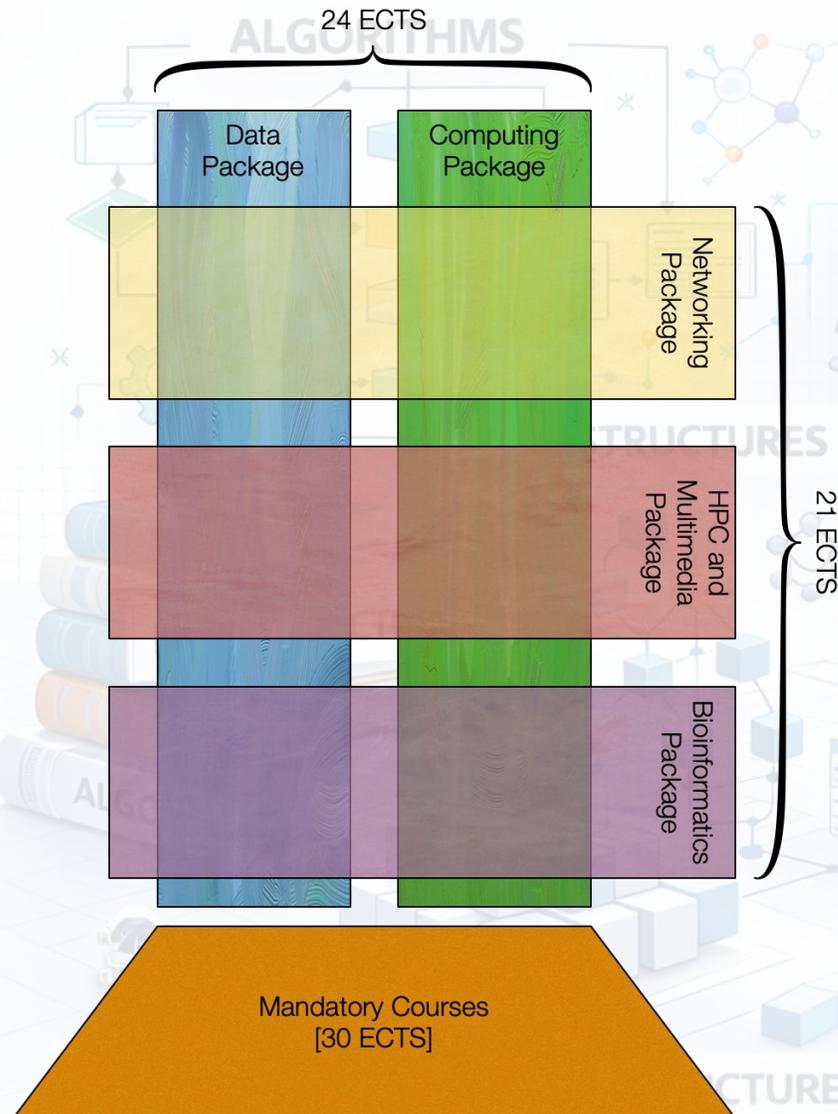
✓ 6 main profiles are possible by combining the suggested packages

✓ Even more nuances and customisations are possible by mixing courses of different packages

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MANDATORY COURSES (30 ECTS)		
Course	ECTS	Period
Operations Research 1	6	Y1.S1
Machine learning	9	Y1.S1
Web Frameworks	6	Y1.S2
Advanced Algorithm Design	9	Y2.S1

ELECTIVE COURSES A (24 ECTS)		
Course	ECTS	Period
Data Package		
Recommender Systems	6	Y1.S2
Search Engines	6	Y1.S2
Graph Databases	6	Y2.S1
Agentic Artificial Intelligence for Information Access	6	Y2.S1
Computing Package		
Automata, Languages and Computation	6	Y1.S1
Mining of Big Data	6	Y1.S2
Deep Learning	6	Y1.S2
Learning from Networks	6	Y2.S1

ELECTIVE COURSES B (21 ECTS)		
Course	ECTS	Period
Bioinformatics Package		
Bioinformatics	9	Y1.S2
Computational Genomics	6	Y2.S1
Learning from Sequences	6	Y2.S2
High-Performance Computing and Multimedia Package		
High Performance Computing	9	Y1.S2
Natural Language Processing	6	Y2.S1
Computational Creativity, Music and Multimedia	6	Y2.S2
Networking Package		
Software Platforms	6	Y1.S1
Computer Networks	9	Y1.S2
Computers and Networks Security	6	Y2.S1

OTHER CHOICES (At Least 12 ECTS)		
Course	ECTS	Period
Quality Engineering	6	Y1.S1
Inferential Statistics	6	Y1.S1
Privacy Preserving Information Access	6	Y2.S1
Advanced Text Analytics	6	Y2.S1
Game Theory	6	Y2.S1
Distributed Systems	6	Y2.S1
Information Security	6	Y2.S2
Operations Research 2	6	Y2.S2
Stochastic Processes	6	Y2.S2

OTHER ACTIVITIES		
Activity	ECTS	Period
English Language/Italian Language	3	
Internship/Research Training	9	Y2
Final Project	21	Y2

More Info:
- ✓ https://degrees.dei.unipd.it/master-degrees/computer-engineering/
- ✓ https://unipd.coursecatalogue.cineca.it/corsi/2025/2334

Contacts

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