



UNIVERSITAT POLITÈCNICA
DE CATALUNYA
BARCELONATECH

UPC Virtual Postgraduate Fair

From 3 to 7 March



UNIVERSITAT POLITÈCNICA
DE CATALUNYA
BARCELONATECH

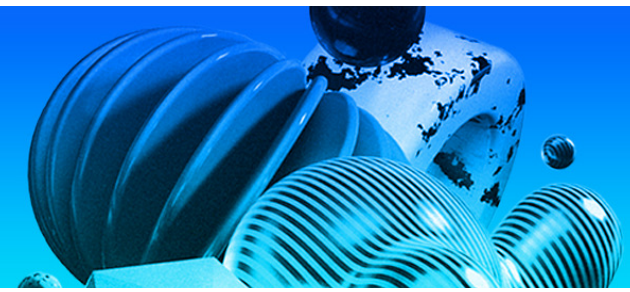
UPC Virtual Postgraduate Fair

**Master's degree in Automatic Control and
Robotics (MUAR)**



UNIVERSITAT POLITÈCNICA
DE CATALUNYA
BARCELONATECH

The UPC



Bachelor's
degree students

25,289

Master's degree
students

6,038

Bachelor's and master's degree
graduates

6,556

Doctoral
candidates

2,189

Continuing
education
programmes

141

Teaching and
research staff

3,677

Agreements with companies and
research projects

1,801

54 %

of doctoral
degree
students

28 %

of master's
degree students
are international

1,555

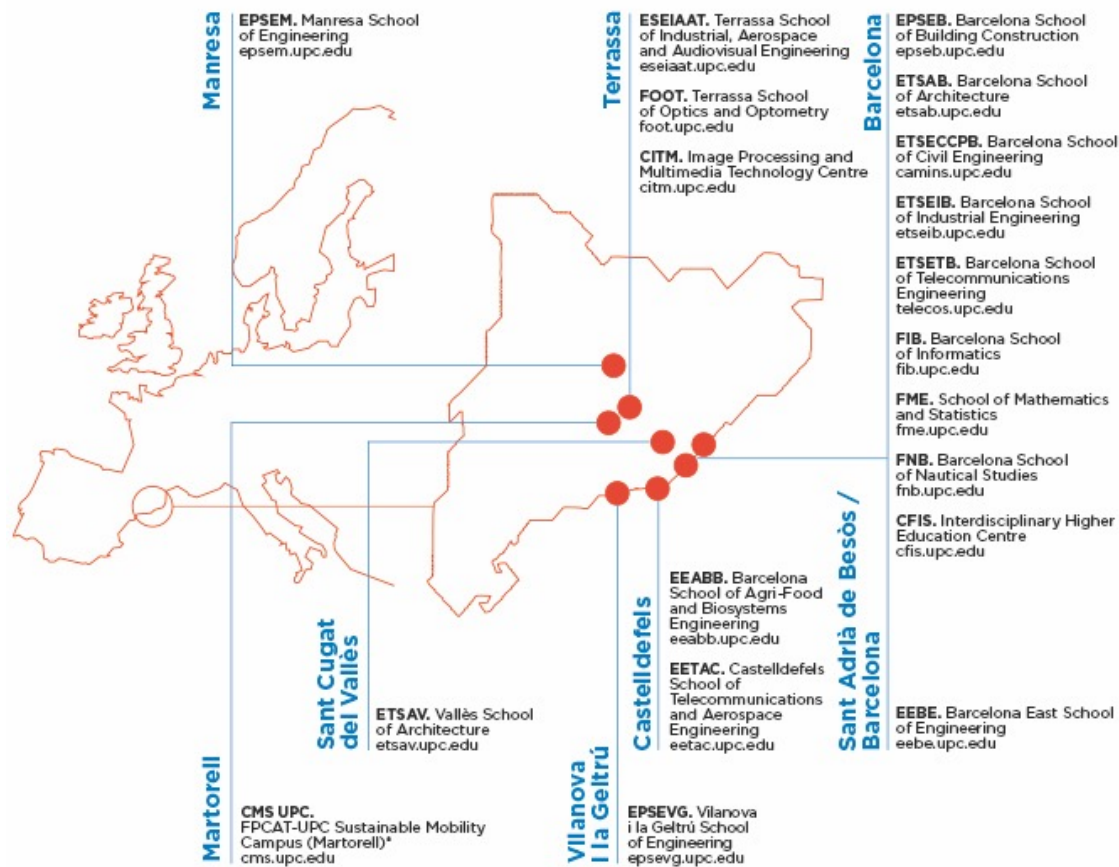
student exchange
agreements
with 695 universities

2,143

Technical, management,
administrative and service staff



The UPC



* Campus for initial vocational and continuing education in automotive engineering, sustainable mobility and advanced industry.

Campuses

9

Schools

18

Master's degrees

96

Master's degree in English

50

Doctoral programmes

46

54

international double degree agreements with 11 countries



UNIVERSITAT POLITÈCNICA
DE CATALUNYA
BARCELONATECH

The UPC



94 %

graduate
employment

94 %

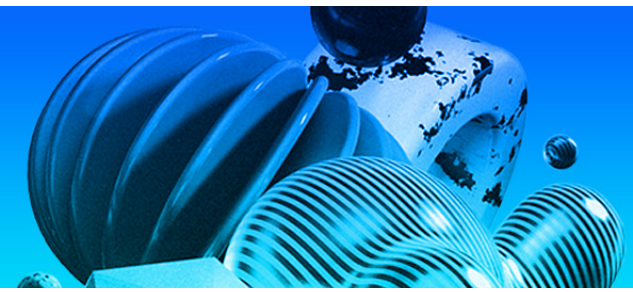
have full-time
jobs

93 %

graduate
employment
In less
than 6 months



Much more than studying



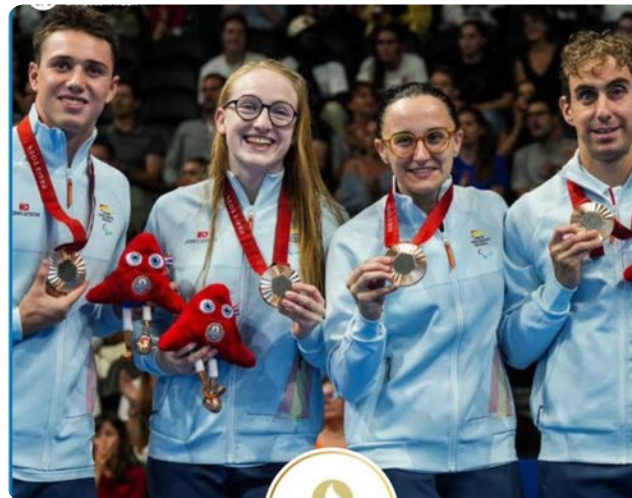
Students associations

Cooperation projects

Awards and competitions

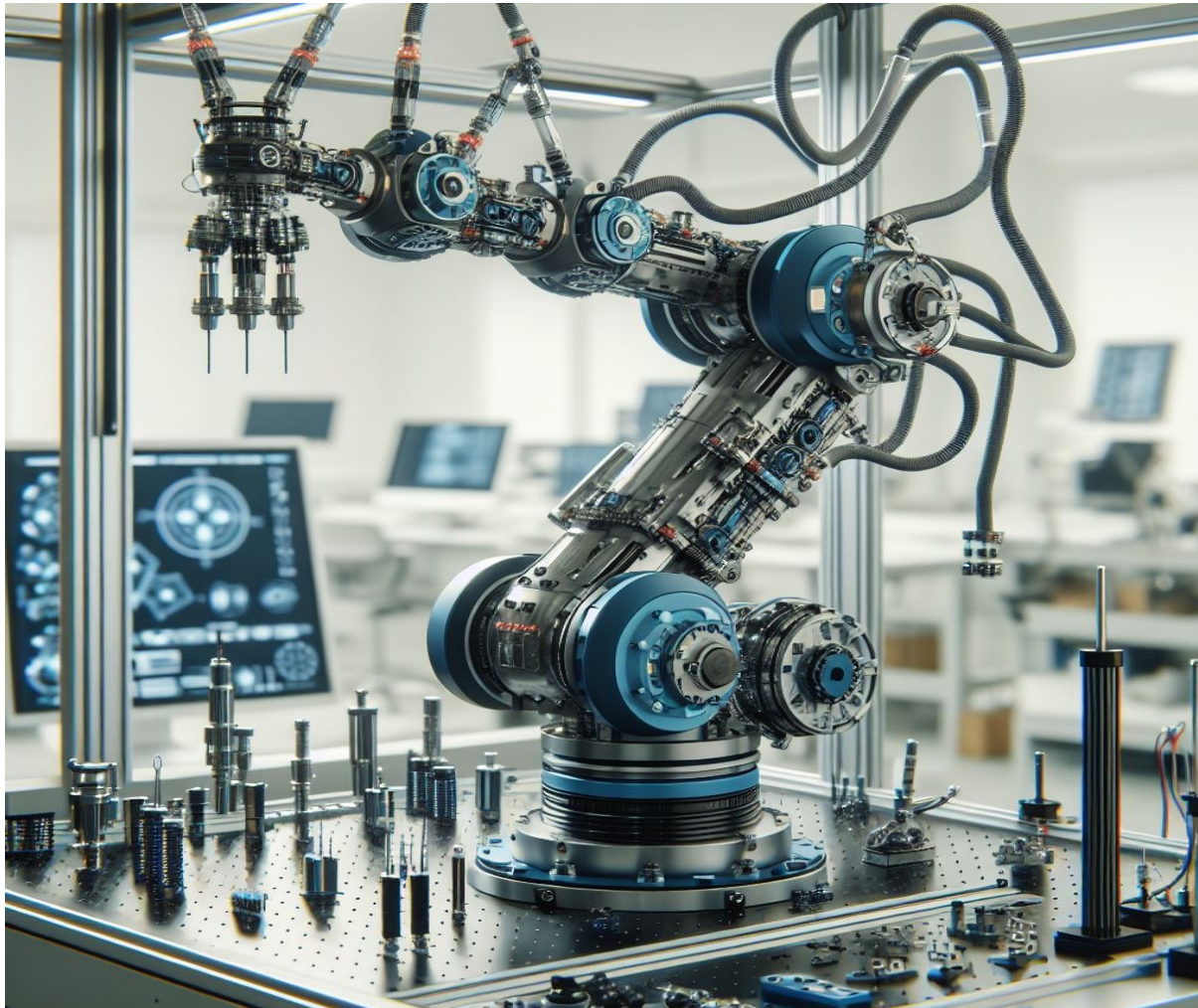
Sports

Cultural activities





UNIVERSITAT POLITÈCNICA
DE CATALUNYA
BARCELONATECH



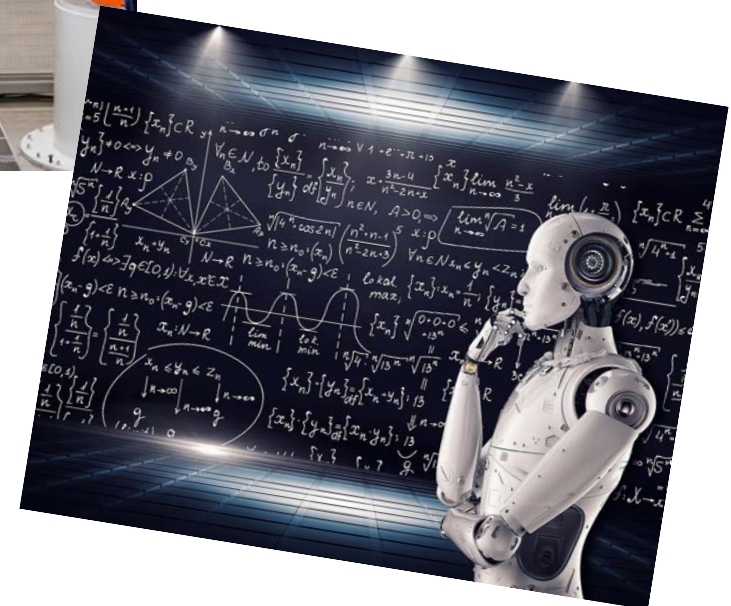
Master's degree in Automatic Control and Robotics

**Academic
Coordinator:
Carlos Ocampo-Martinez**

Master's degree in Automatic Control and Robotics

The Grandma's Question

Robotics
Automatic control
Artificial intelligence
(Machine) learning



Master's degree in Automatic Control and Robotics

It combines fundamental and applied knowledge of

- ✓ Industrial engineering (e.g., electrical, mechanical)
- ✓ Robotics
- ✓ Industrial electronics
- ✓ Computer science
- ✓ Automation and control systems
- ✓ Emerging concepts from artificial intelligence





Master's degree in Automatic Control and Robotics

- ✓ Two academic years, 120 ECTS credits
- ✓ Starting September each year
- ✓ About 40 students
- ✓ Afternoons
- ✓ **English**



UNIVERSITAT POLITÈCNICA DE CATALUNYA
BARCELONATECH

Departament d'Enginyeria de Sistemes,
Automàtica i Informàtica Industrial



Departament d'Organització
d'Empreses

UNIVERSITAT POLITÈCNICA DE CATALUNYA
BARCELONATECH

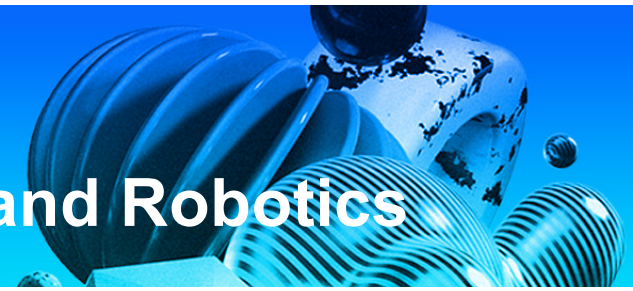
Institut d'Organització
i Control de Sistemes
Industrials



Institut de Robòtica
i Informàtica Industrial



Master's degree in Automatic Control and Robotics



Syllabus 2025

- ✓ Six big blocks:
 - ✓ Control Engineering
 - ✓ Robotics and Computer Vision
 - ✓ Transversal Tools
 - ✓ Advanced Topics
 - ✓ Elective Block
 - ✓ Master's Thesis
- ✓ All subjects of 5 ECTS credits
- ✓ Equivalences for double Master's degree MUAR+MUEI (Industrial Engineering)

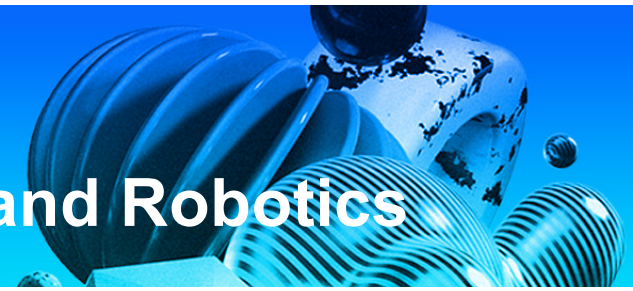
Master's degree in Automatic Control and Robotics

Syllabus 2025

| | S1 | S2 | S3 | S4 | S5 | S6 |
|----|-----------------------|-------------------------------|--------------|-----------------------------|------------------------------|----------------|
| C1 | Automatic Control I | Systems' ID & Simulation | Robotics I | Optimization Tools | Signal Analysis & Processing | Software Tools |
| C2 | Automatic Control II | Computer Vision | Robotics II | AI Approaches | Elective I | Elective II |
| C3 | Automatic Control III | Special Topics in Control Eng | Robotics III | Management & Administration | Elective III | Elective IV |
| C4 | Master's Thesis | | | Elective Block | | |



Master's degree in Automatic Control and Robotics



Syllabus 2025

Advanced Topics (Elective Subjects)

- ✓ Fault Diagnosis and Supervisory Control
- ✓ Models and Tools for Decision Making
- ✓ Human Robot Interaction
- ✓ Medical Robotics
- ✓ Model Predictive Control

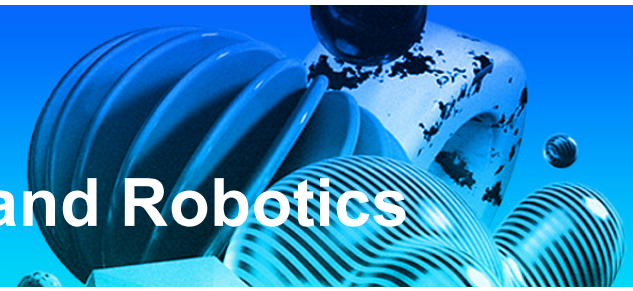
**Spring Offer
(Q2 & Q4)**

- ✓ Hybrid Systems
- ✓ Applications and Technologies in Computer Vision
- ✓ Autonomous Mobile Robots
- ✓ Reinforcement Learning in Robotics
- ✓ Embedded and Real-time Systems
- ✓ Robust Control

**Autumn Offer
(Q1 & Q3)**



Master's degree in Automatic Control and Robotics



Syllabus 2025

Elective Block

- ✓ Placed at Q4 (second half of second year)
- ✓ 15 ECTS credits should be covered
- ✓ Different activities/options to choose/combine
 - ✓ Subjects from Advanced Topics block (elective subjects)
 - ✓ Local, national or international internships (formal agreement UPC-company required)
 - ✓ National or International mobility (other universities or research centres) – May include Master's Thesis (30 ECTS in total)
 - ✓ Recognition of professional experience (subject to Faculty rules)

Master's degree in Automatic Control and Robotics

Internships

Applus⁺
IDIADA

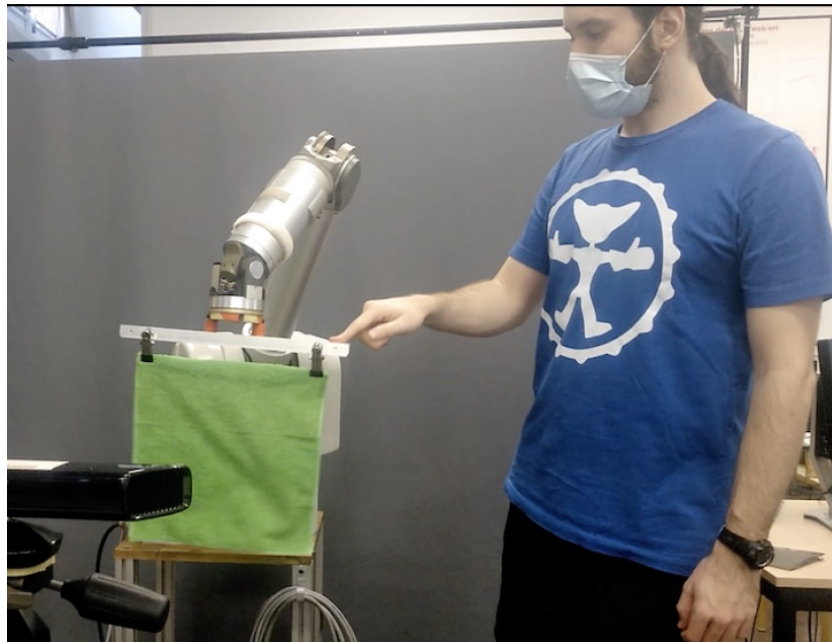


accenture

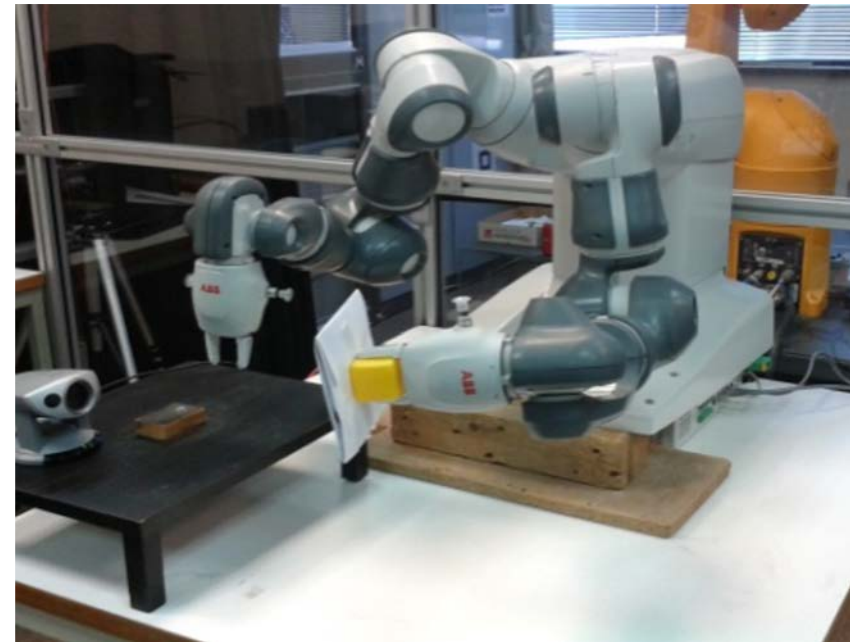


Master's degree in Automatic Control and Robotics

Master's thesis topics (few examples)



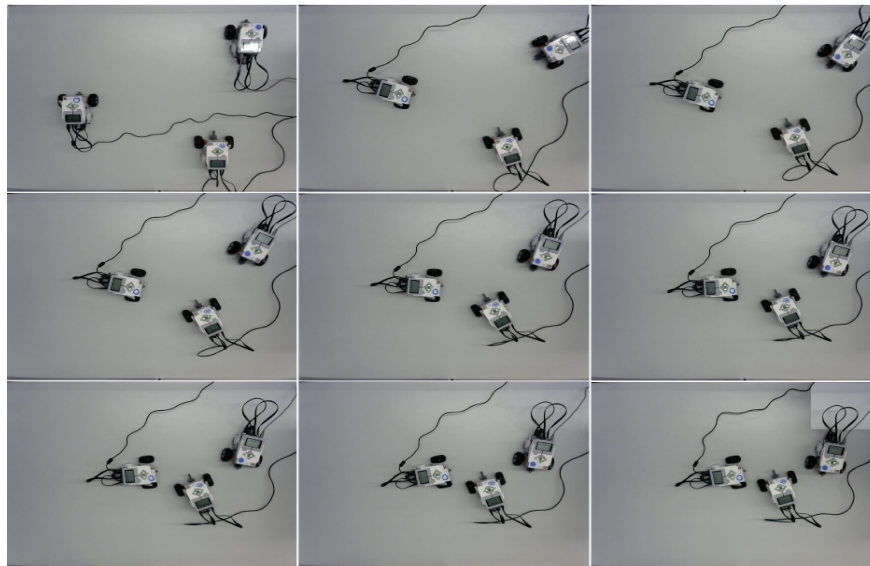
Robotic cloth manipulation
under uncertainties



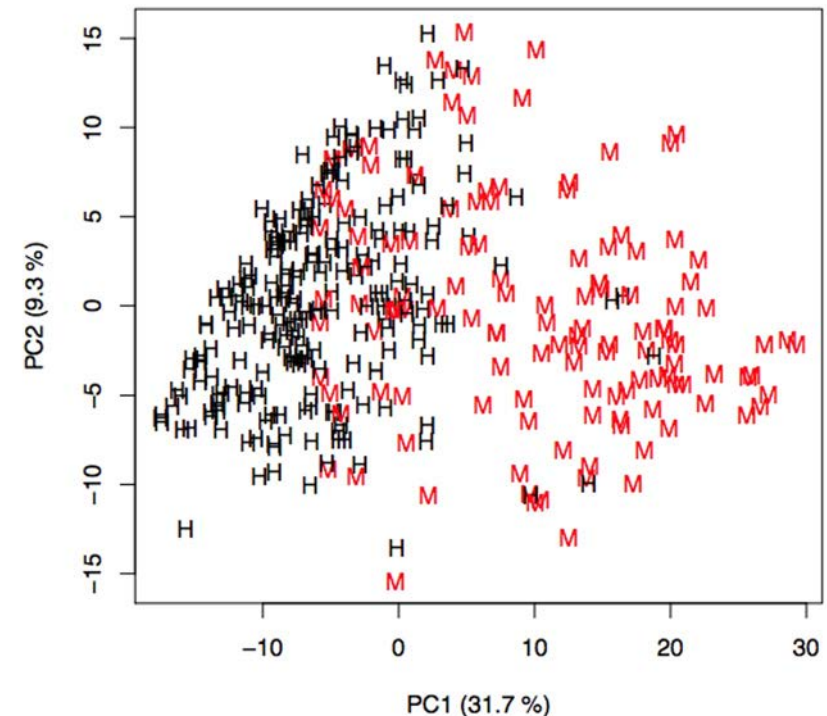
Implementation of a visual servo
control in a bi-manual
collaborative robot.

Master's degree in Automatic Control and Robotics

Master's thesis topics (few examples)



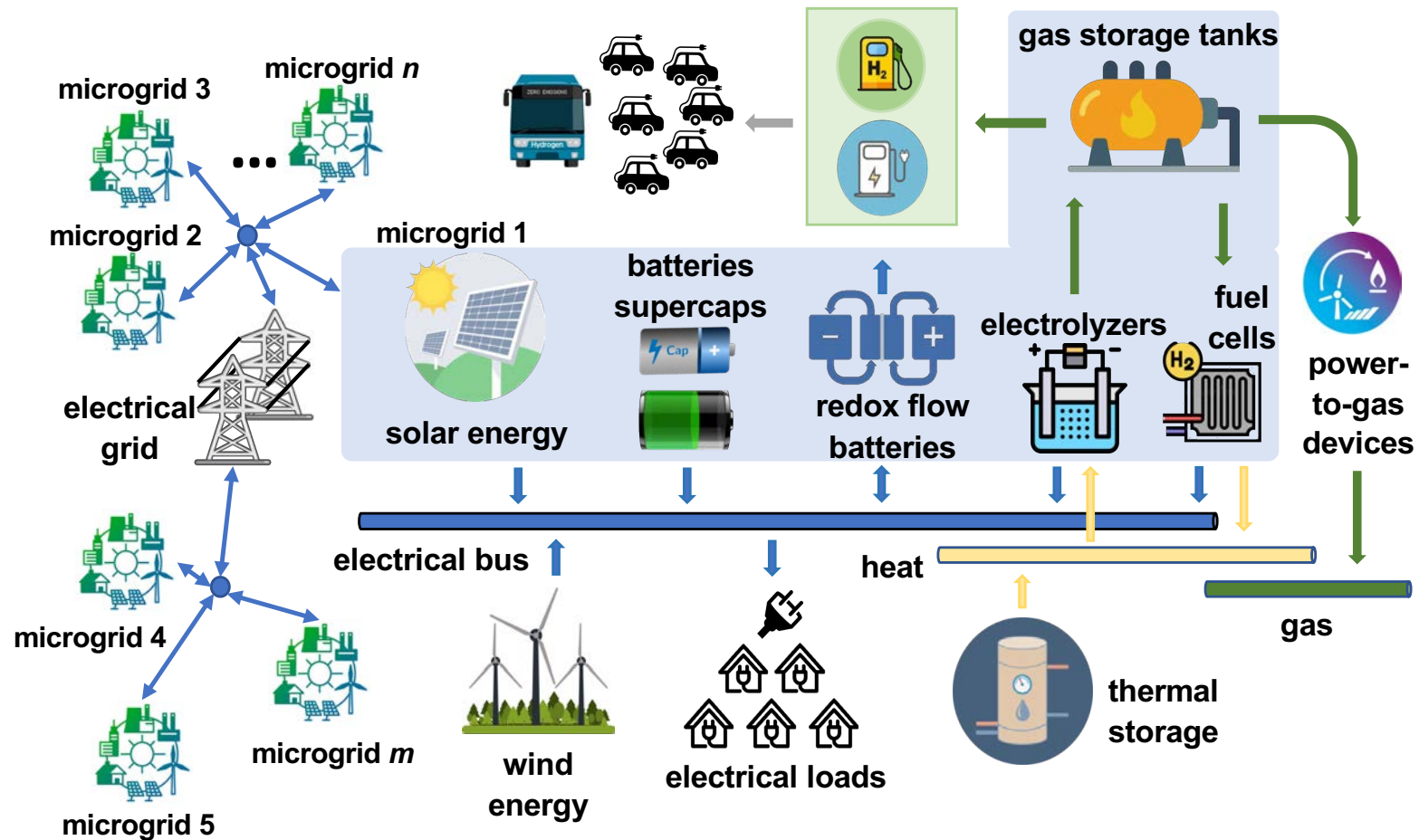
Replicator dynamics alignment
sequence with LEGO Mindstorms



Principal Component Analysis of an
image dataset, H/M for Female/Male

Master's degree in Automatic Control and Robotics

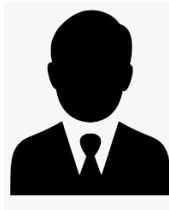
Master's thesis topics (few examples)





Master's degree in Automatic Control and Robotics

MUAR's Academic Coordinator



Prof. Carlos OCAMPO-MARTINEZ



coordinador.mar@upc.edu



ETSEIB H Building, office DSH2.26



+34 93 401 57 52



Master's degree in Automatic Control and Robotics

How to apply

www.etseib.upc.edu/en → Academic Programmes → How to apply to ETSEIB'S academic programmes

✓ Application:

Round 1 (February 24th to March 23th)

Round 2 (April 21th to May 18th)

Recommendation to apply on the first round. In case we don't open second round.

✓ Provisional list of accepted people:

Round 1: End of April 2025

Round 2: End of June 2025

✓ People seat acceptance: Up to 7 days from the publication list

✓ Definitive list of accepted people: Mid – July 2025

✓ Enrollment: September 2025



Master's degree in Automatic Control and Robotics

How to apply

Applications Round 1

February 24th to March 23th of 2025



Applications Round 2

April 21th to May 18th of 2025



<https://www.upc.edu/en/masters/access-admission-enrolment/pre-enrolment>

[General Information, Admission and access requirements and syllabus](#)

[Required documentation for the application](#)

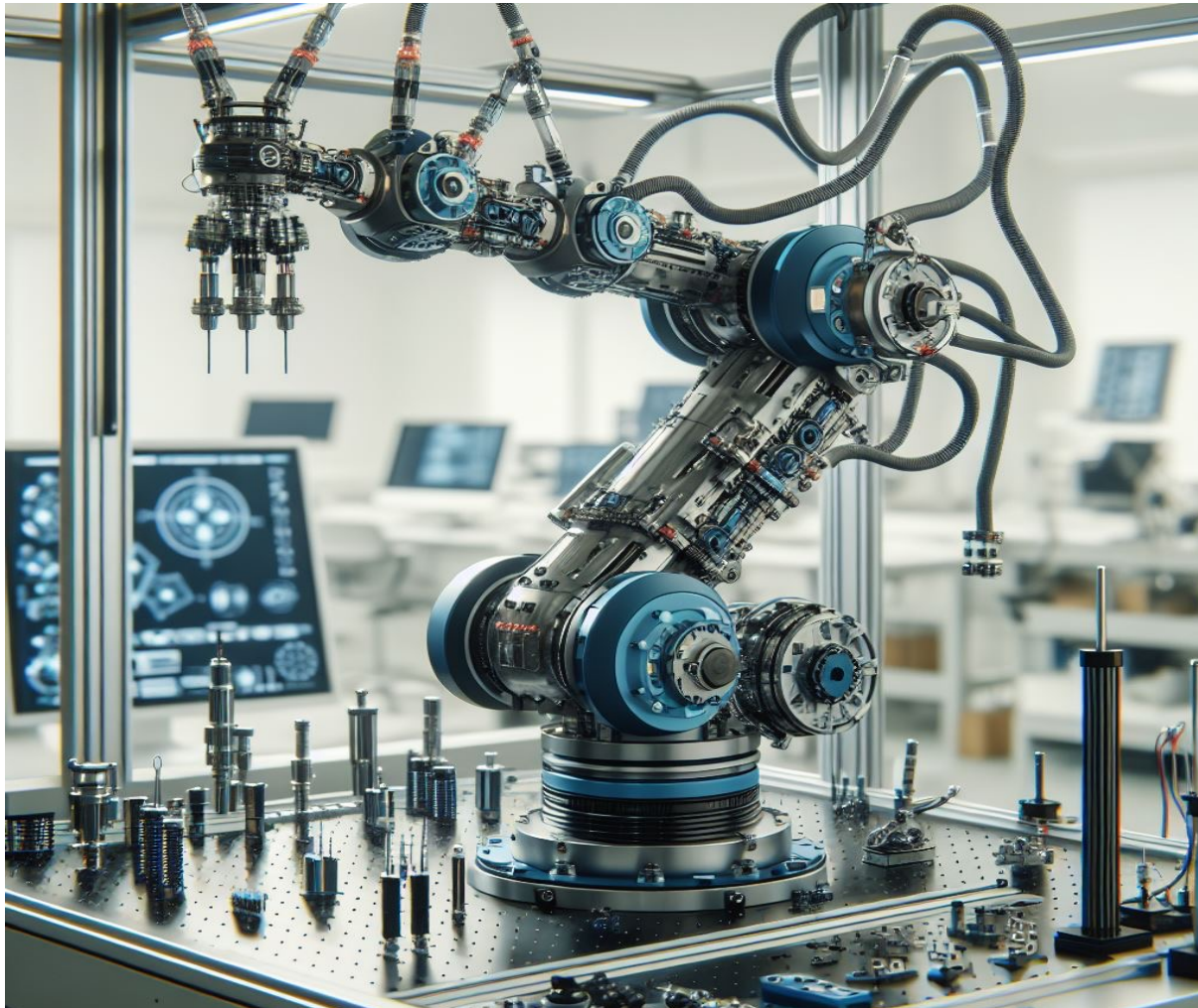
<https://etseib.upc.edu/en/Academic%20programmes/academic-procedures/acces/documentation>

Contact information

<https://demana.upc.edu/etseib/>



UNIVERSITAT POLITÈCNICA
DE CATALUNYA
BARCELONATECH



Master's degree in Automatic Control and Robotics

Academic
Coordinator:
Carlos Ocampo-Martinez
coordinador.mar@upc.edu