Double-degree in
AUTONOMOUS SYSTEMS

OPEN DAYS - Lauree Magistrali
15.04.2021

Coordinator: Prof. Daniele Fontanelli
Why a Master School EIT: Amplify Your Learning!

Choose Your Own Curriculum

A World Class Network

Two Years, Two Degrees

EIT Digital Summer School

Colocation Centres

The Alumni Advantage
* Graphic is representative of the structure of the programme and minor changes may be applicable at our different universities.
AUTONOMOUS SYSTEMS (AUS)

From self-driving cars to robotic assistants, the Internet of Things, and AI-based software solutions – the future is autonomous.

The interdisciplinary programme is designed to approach autonomous systems from both a Computer science and an Mechatronic engineering perspective.

We use a combination of face-to-face workshops, group activities, and hands-on exercises to cover everything from the basics of autonomous systems to such specific skills as:

- Internet of Things (IoT)
- Machine learning / Artificial intelligence
- Robotics
- Automation and control
- Modelling
- Estimation
- Autonomous software systems
MOBILITY MAP

AUTONOMOUS SYSTEMS (AUS)

2 YEARS
UNIVERSITIES
COUNTRIES
DEGREES

YEAR 1
ENTRY LOCATIONS

FINLAND
Aalto University, Helsinki

SWEDEN
KTH Royal Institute of Technology, Stockholm

GERMANY
Technical University of Berlin

ITALY
University of Trento

FRANCE
Université Côte d’Azur, Nice

HUNGARY
Budapest University of Technology and Economics

YEAR 2
EXIT LOCATIONS

FINLAND
Aalto University, Helsinki

SWEDEN
KTH Royal Institute of Technology, Stockholm

GERMANY
Technical University of Berlin

ITALY
University of Trento

HUNGARY
Eötvös Loránd University, Budapest

FRANCE
EURECOM, Campus SophiaTech, Biot
Application dates & deadlines

**Period one**
November - February

**Period two**
February - April

Both open to EU/EEA/CH/ Non-EU citizens

Scholarships available

LOCAL RECRUITMENT - applications in NOVEMBER 2021
1st semester Student LM Mechatronics > 2nd semester AUS Student
more information: eitmaster@unitn.it

English requirements
2nd year Specializations

KTH STOCKHOLM - SWEDEN
Intelligent Autonomous Systems

TUB BERLIN - GERMANY
Applications of Autonomous Systems

EURECOM - FRANCE
Sensing, Communicating and Processing Big Data for Autonomous Systems

UNIVERSITÀ DI TRENTO
Autonomous Robotics Systems

UNITN - ITALY
Autonomous Robotics Systems

ELTE BUDAPEST - HUNGARY
Computer Science for Autonomous Driving

AALTO - FINLAND
Robotics and Artificial Intelligence

KTH STOCKHOLM - SWEDEN
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Robotics and Artificial Intelligence
Autonomous Systems at University of Trento

**1st YEAR COURSES**

**TECHNICAL COURSES (90 ECTS)**

1st year: 36 ECTS

MANDATORY TECHNICAL COURSES (36 ECTS)

*Autumn semester (21 ECTS):*
- Robotic perception and action (9 ECTS)
- Industrial robotics (6 ECTS)
- Machine learning (6 ECTS)

*Spring semester (9 ECTS):*
- Modeling and simulation of mechatronic systems (9 ECTS)

ELECTIVE TECHNICAL COURSES (6 ECTS)

**I&E COURSES (30 ECTS)**

1st year: 24 ECTS

MANDATORY I&E COURSES (24 ECTS)

*Autumn semester (6 ECTS):*
- Logistics and warehouse management (6 ECTS)

*Spring semester (18 ECTS):*
- Business Development Laboratory (9 ECTS)
- Design of digital production and assembly systems (6 ECTS)
- Summer School (3 ECTS)
11 Summer Programmes in Digital Innovation & Entrepreneurship

PROGRAMME 2021

- **BIG DATA FOR INDUSTRY 4.0**
  - Bologna, Bertinoro, Italy
  - 25 July - 7 August

- **DIGITAL METHODS FOR MEDIA AND DEMOCRACY**
  - Amsterdam, Netherlands
  - 4 July - 17 July

- **DISRUPTING FINANCE WITH DIGITAL TECHNOLOGIES**
  - Madrid, Spain
  - 18 July - 31 July

- **IOT PLATFORMS FOR INDUSTRY 4.0**
  - Munich, Germany
  - 25 July - 7 August

- **DATA SCIENCE FOR FINANCIAL PROBLEMS**
  - Budapest, Hungary
  - 18 July - 31 July

- **DIGITAL PLATFORMS FOR SMART CITIES**
  - Helsinki, Finland
  - 8 August - 21 August

- **E-HEALTH: PERSONALISED PREVENTION**
  - Tallinn, Estonia
  - 25 July - 7 August

- **DATA, VISUALISATION AND CONNECTIVITY FOR HEALTHCARE**
  - Coventry, London, United Kingdom
  - 25 July - 7 August

- **DIGITAL TRANSFORMATION FOR ORGANISATIONAL RESILIENCE**
  - Ljubljana, Slovenia
  - 25 July - 7 August

- **INTERNET OF THINGS AND BUSINESS TRANSFORMATION**
  - Stockholm, Sweden
  - 1 August - 14 August

- **RESHAPING CITIES FOR A HEALTHY ENVIRONMENT**
  - Rennes, France
  - 4 July - 17 July
Autonomous Systems at University of Trento

2nd YEAR COURSES:
‘Autonomous Robotic Systems’ Specialization

Keywords: Estimation, optimal control, planning, mobile robots

TECHNICAL COURSES (90 ECTS)

2nd year: 24 ECTS for courses + 30 ECTS FINAL PROJECT

MANDATORY TECHNICAL COURSES (24 ECTS)

Autumn semester (18 ECTS):
Distributed robot perception (6 ECTS)
Robot Planning and its applications (6 ECTS)
Intelligent vehicles and autonomous driving (6 ECTS)

ELECTIVE TECHNICAL COURSES (6 ECTS)

I&E COURSES (30 ECTS)

2nd year: 6 ECTS

MANDATORY I&E COURSES (6 ECTS)

Autumn semester (6 ECTS):
Innovation and entrepreneurship studies in ICT (6 ECTS)
"Robots could fundamentally help society"

Elisabeth started her studies at the University in Trento and she is doing her specialisation Robotics and Artificial Intelligence at Aalto University in Finland.

"There is a strong focus on robotics and mechanics in Trento, where I did my entry year."

"An autonomous world would be amazing"

Marta entered the EIT Digital Master School in 2018. Her first year was at the KTH Royal Institute of Technology in Stockholm, Sweden and in her final year she attended the University of Trento.

"The University of Trento was a logical choice because of the specialisation in real-time perception, decision and control for autonomous driving. The university is open to smart cities projects and the teachers are really good, they talk from their own experience."
Careers in autonomous systems are simply exploding.

Our AUS graduates can be found working in open innovation settings and leading technology companies, including in the manufacturing, logistics, mining, waste, media, finance, healthcare, and services sectors.

Some have even gone on to launch their own successful start-ups and consultancies.
## Master Thesis examples

<table>
<thead>
<tr>
<th>Company</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Done Enterprises Ltd.</td>
<td>Machine learning for service robots perception</td>
</tr>
<tr>
<td>German Aerospace Center</td>
<td>Traffic control with reinforcement learning</td>
</tr>
<tr>
<td>TNO</td>
<td>Machine learning for gas turbine sensor placement</td>
</tr>
<tr>
<td>Witted</td>
<td>Perception and control for submarine vehicles</td>
</tr>
<tr>
<td>BMW</td>
<td>Perception for autonomous driving cars</td>
</tr>
<tr>
<td>FCA</td>
<td>Estimation and control or platoon of vehicles</td>
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</tbody>
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Do you need more information?

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