

## General information

An intensive set of courses providing attendees with an introduction to the theoretical foundations as well as the practical applications of some of the machine learning methods and the modern statistical analysis techniques currently in use.

12 courses of 15h each are offered during 2 weeks.

Each course has theoretical and practical classes with a computer.

Students are free to choose the courses according to their interests, i.e., no restrictions besides those imposed by timetables, apply on the number or choice of courses.

## Registration

40 people max per course.

Courses with less than 6 people will not be open.

Price per course	By May 27	After May 27
Academia	300€	350€
Industry	425€	475€

25% discount for AEPIA and SEIO members.

Tuition fees include attendance to lectures and educational materials.

Fees will be independent from the number of enrolments.

Application via email: [mlas@fi.upm.es](mailto:mlas@fi.upm.es)



UNIVERSIDAD  
POLITÉCNICA  
DE MADRID



### ORGANIZATION

P. Larrañaga  
*Professor at UPM*

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*Professor at UPM*

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*Associate Professor  
at UPM*

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*Manager*



### Computational Intelligence Group

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MADRID-UPM

# 17<sup>th</sup> Machine Learning and Advanced Statistics

SUMMER SCHOOL  
2025

Madrid, June 16-27



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UNIT  
MADRID



ESCUELA TÉCNICA  
SUPERIOR DE INGENIEROS  
INFORMÁTICOS

# PROGRAMME

This summer school complements the technical background of attendees in the field of data analysis and modelling.

Open to any student or professional seeking further knowledge about a field that is more and more involved in nearly all productive areas (Computer Science, Engineering, Pharmacy, Medicine, Economics, Consultancy, Sports, Statistics, etc.).

Also providing a set of computational tools to try the studied techniques on practical problems.

Teachers will make the course content accessible to students with all backgrounds.

## WEEK 1

June 16-20, 2025

09:45 - 12:45h | • C01: Bayesian Networks  
• C02: Time Series

13:45 - 16:45h | • C03: Supervised Classification  
• C04: Reinforcement Learning

17:00 - 20:00h | • C05: Deep Learning  
• C06: Bayesian Inference

## WEEK 1

June 23-27, 2025

09:45 - 12:45h | • C07: Causality  
• C08: Clustering

13:45 - 16:45h | • C09: Gaussian Processes and Bayesian Optimization  
• C10: Explainable Machine Learning

17:00 - 20:00h | • C11: Generative AI  
• C12: Feature Subset Selection

## Instructors

- C01: C. Bielza, P. Larrañaga, B. Mihaljević (UPM)
- C02: A. Justel (UAM), G. Carrete (IE University), J.M. Marín (UC3M)
- C03: P. Larrañaga, C. Bielza, B. Mihaljević (UPM)
- C04: J.M.Peña (Linköping University)
- C05: A. Barbero, A. Suárez (UAM)
- C06: M. Zaharieva, A. Virbickaite (CUNEF)
- C07: J.M.Peña (Linköping University)
- C08: A. Otero (CEU-San Pablo)
- C09: D. Hernández-Lobato (UAM), E. Garrido (U. Comillas)
- C10: B. Mihaljević, E. Valero-Leal (UPM)
- C11: A. Barbero, C. Alaíz, A. Suárez (UAM)
- C12: B. Mihaljević, P. Larrañaga, C. Bielza (UPM)

