



Introduction to the course

2025-2026

Explainable and Trustworthy AI

Eliana Pastor

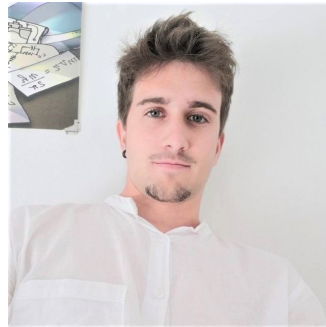
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Teaching staff

Eliana Pastor



Gabriele Ciravegna



Eleonora Poeta



Course topics in a glance

- Trustworthy AI: Notions and Requirements
- Taxonomy of Explainable AI (XAI)
- Explainable by design models
- Pre-modeling explainability
- In-modeling explainability
- Post-hoc model agnostic approaches
- Concept-based explainable AI
- Evaluation of explanations
- Attention-based explainability
- Adversarial Attacks
- Counterfactual explanations

Material

Announcements on the official «teaching portal» private page <https://didattica.polito.it/> or through institutional email

Explainable and trustworthy AI

01HFOOV, 01HFOSM, 01HFOWS, 01HFOYG

A.A. 2025/26

Slides, texts of the practices, and all other materials are available on the public page of the course:

https://dbdmg.polito.it/dbdmg_web/2026/explainable-and-trustworthy-ai-2025-2026/

 Courses

Explainable and trustworthy AI (2025/2026)

General Information

SSD: ING-INF/05

CFU: 6

Lecturer: Eliana Pastor

Teaching Staff: Gabriele Ciravegna, Eleonora Poeta

Course structure

The course includes

- Lectures
 - Hands-on and exercises
 - Laboratories
 - Experimental activities
 - Practical analysis and evaluations of the methods covered in the course
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- Lab practises will start from the third week

Schedule

- **Thursday**

16:00-19:00

classroom 14

- **Friday**

8:30-10:00

classroom 21

No fixed slot distinction between Lecture
and Lab Practise

Exam

- Written exam
 - Main definitions and concepts of Explainable and Trustworthy AI
 - Explanation techniques and their main characteristics
 - Main libraries implementing explanation methods
- Group project (3/4 students)
 - Implement and evaluate a complete data science pipeline and its explanation
 - Design and evaluate explanation methods
 - Presentation in oral form

The detailed exam rules will be soon published in the web page of the course

Project goal and required objectives

- **Literature review:** systematic review of the works related to the project topics
- **Research gap:** identification of research gaps of the problem given the current literature
- **Methodology and Implementation:** propose and implement a possible solution addressing such research gaps
- **Analysis:** assess the proposed solution and analyze and discuss the outcomes