UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

SYLLABUS DEL CORSO

Neural Symbolic Computation

2526-114R-2-02

Title

Neural Symbolic Computation

Teacher(s)

Guido Fiorino
Rafael Peñaloza
Italo Zoppis

Language

English

Short description

The aim of the course is to present the field of neuro-symbolic integration, also known as Neural-Symbolic Learning and Reasoning.

As far as possible we try to keep the couse self-contained, in particular for the logical notions necessary to understand the approach.

Tentative programme:

- Non-monotonic reasoning and ASP;
- Fuzzy and Real Logics;
- Inserting and extracting knowledge from CLIP System;
- Logic Tensor Networks and, if possible, Logical Neural Networks;
- Computational Graphs.

References:
a recent book about neuro-symbolic integration:
Pascal Hitzler, Md Kamruzzaman Sarker (eds.), Neuro-Symbolic Artificial Intelligence - The State of the Art. Frontiers in Artificial Intelligence and Applications Vol 400, IOS Press, Amsterdam, 2025.

CFU / Hours

2 CFU/16 Hours

Teaching period

September 2026

Sustainable Development Goals