

Introduction to Deep Learning

25th–28th May 2026, Casalecchio di Reno, CINECA

Teachers:

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Agenda

Monday, May 25 – Introduction and Fundamentals

09:30 – 11:00	Cluster connection and introduction to the CINECA environment
11:00 – 11:30	Coffee break
11:30 – 13:00	Git essentials and Deep Learning fundamentals
13:00 – 14:30	Lunch break
14:30 – 16:00	Introduction to PyTorch
16:00 – 16:30	Coffee break
16:30 – 18:00	Optimization and training loops with PyTorch

Tuesday, May 26 – Neural Networks

09:30 – 11:00	Multi-Layer Perceptrons (MLP)
11:00 – 11:30	Coffee break
11:30 – 13:00	Convolutional Neural Networks (CNN)
13:00 – 14:30	Lunch break
14:30 – 16:00	Hands-on session: autoencoders
16:00 – 16:30	Coffee break
16:30 – 18:00	Hands-on session: transfer learning

Wednesday, May 27 – Large Language Models and Distributed Training

09:30 – 11:00	Introduction to Large Language Models (LLMs)
11:00 – 11:30	Coffee break
11:30 – 13:00	Hands-on session with LLMs
13:00 – 14:30	Lunch break
14:30 – 16:00	Introduction to Distributed Deep Learning
16:00 – 16:30	Coffee break
16:30 – 18:00	Hands-on session with distributed training

Thursday, May 28 – Fine-Tuning and RAG

09:30 – 11:00	Parameter-efficient fine-tuning techniques
11:00 – 11:30	Coffee break
11:30 – 13:00	Hands-on session on parameter-efficient fine-tuning
13:00 – 14:30	Lunch break
14:30 – 16:00	Retrieval-Augmented Generation (RAG): theory and applications
16:00 – 16:30	Coffee break
16:30 – 18:00	Hands-on session on Retrieval-Augmented Generation