

Seminari del Departament d'Estadística i Investigació Operativa

Universitat Politècnica de Catalunya

6th November 2026

Title: Transformer architecture and the training of LLMs.

Authors: Toni Lozano Bagén (UAB).

Abstract: Large Language Models (LLMs) have established themselves as a central tool in automated text analysis and generation, and behind virtually all of them lies the same architecture: the Transformer. In this talk, we will take a descriptive tour of their core components (the attention mechanism, residual connections, normalisation) with the aim of making their internal workings easy to understand. Next, we will review the three main phases that define the training of an LLM: unsupervised pre-training on large corpora, supervised fine-tuning, and reinforcement learning from human feedback (RLHF).

Bio: Toni Lozano is a Lecturer in the Department of Computer Science at Universitat Autònoma de Barcelona (UAB). He obtained his PhD in Mathematics from the UAB in 2016, after graduating in 2011 with degrees in Mathematics and Computer Engineering. Since 2016, he has been actively working in the field of data science, specialising in deep learning methods. Over recent years, he has contributed to the development of various projects for companies and institutions, applying neural networks to the analysis of large unstructured datasets.