Finanziato dall'Unione europea NextGenerationEU | Ministero dell'Università e della Ricerca | Italiadomani – Piano Nazionale di Ripresa e Resilienza

UNIMORE – Università degli Studi di Modena e Reggio Emilia | Università della Calabria

SLIMFIT

Workshop on Logic-in-Memory and In-Memory Computing

November 28th 2025
Tecnopolo, Dipartimento di Ingegneria «Enzo Ferrari»
Via P. Vivarelli 2 – Modena (MO)

Many industrial applications based on artificial intelligence (AI) have emerged and are all based on existing technology and computational paradigms. One of the main challenges for the future expansion of AI is to bridge the gap between the limited computational power available at the edge and the high computational complexity of AI algorithms. This calls for the development of new energy-efficient hardware in which memory and computation are co-located.

This workshop will address this topic and explore the most recent trends in hardware development of in-memory computing platforms, including in-memory execution of logic operations and analog accelerators.

08:30-09:15 Welcome and Registration

09:15-09:30 Opening

Welcome and Introduction
Paolo Pavan – Rector's Delegate for Internationalization (Università di Modena e Reggio Emilia - Italy)

09:30-11:00 Session 1 – The SLIMFIT Project (Chair: P. Pavan, Università di Modena e Reggio Emilia)

The SLIMFIT Project and the SLIMFIT Workshop: an overview
Francesco Maria Puglisi (Università di Modena e Reggio Emilia - Italy)

The SLIMFIT Project: results and future perspectives
Raffaele De Rose (Università della Calabria - Italy)

11:00-11:30 Discussion Time

11:30-13:00 Session 2 – In-Memory Computing with RRAM (Chair: F. M. Puglisi, Università di Modena e Reggio Emilia)

In-memory computing with RRAM devices
Vikas Rana (Forschungszentrum Jülich - Germany)

Memristor-based Neural Networks: Test Structures, Binary Computing and Powering
Vincenzo Della Marca (Aix-Marseille University - France)

13:00-14:00 Break

14:00-15:30 Session 3 – In-Memory Computing with SRAM and MRAM (Chair: R. De Rose, Università della Calabria)

Logic-in-Memory with nanomagnets
Fabrizio Riente (Politecnico di Torino - Italy)

Exploring Digital In-Memory Computing Architectures from Array to Circuits
Cristian Zambelli (Università di Ferrara – Italy)

15:30-16:00 Closing

Registration (mandatory and free of charge):
Scan the QR code, scroll down the webpage and find the link! → → →

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