POLITECNICO DI MILANO

PhD in INGEGNERIA DELL'INFORMAZIONE / INFORMATION TECHNOLOGY - 41st cycle

Research Area n. 2 - Electronics

THEMATIC Research Field: APPLICATION OF NONVOLATILE MEMORIES IN MACHINE LEARNING (AI)

Monthly net income of PhDscholarship (max 36 months)
1500.0
In case of a change of the welfare rates during the three-year period, the amount could be modified.

Context of the research activity	
Motivation and objectives of the research in this field	Artificial intelligence (AI) is one of the most demanding computing task in terms of amount of data and utilization of the memory. To minimize the energy consumption and hardware resources for AI training and inference, new nonvolatile memory (NVM) technologies and architecture are deeply needed. This doctoral program will address novel applications of NVM based on device, circuit, and algorithm co-design.
Methods and techniques that will be developed and used to carry out the research	The research program will imply a range of methodologies, including device and circuit characterization, device modeling, and circuit design and simulations.
Educational objectives	The educational objectives include the acquisition and consolidation of knowledge and practical skills on device technology, device characterization, circuit design and AI/ML algorithms.
Job opportunities	The PhD program provides a solid background for covering several professional engineering jobs in the industry, including microelectronics process experts and embedded system designers for mixed-signal edge AI accelerators.

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Composition of the research group	1 Full Professors 0 Associated Professors 6 Assistant Professors 8 PhD Students
Name of the research directors	Prof. Daniele Ielmini

Contacts
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Additional support - Financial aid per PhD student per year (gross amount)	
Housing - Foreign Students	--
Housing - Out-of-town residents	--

Scholarship Increase for a period abroad	
Amount monthly	750.0 €
By number of months	6

Additional information: educational activity, teaching assistantship, computer availability, desk availability, any other information

EDUCATIONAL ACTIVITIES (purchase of study books and material, including computers, funding for participation in courses, summer schools, workshops and conferences): financial aid per PhD student.

TEACHING ASSISTANTSHIP: availability of funding in recognition of supporting teaching activities by the PhD student.
There are various forms of financial aid for activities of support to the teaching practice.
The PhD student is encouraged to take part in these activities, within the limits allowed by the regulations.

COMPUTER AVAILABILITY:
1st year: Yes
2nd year: Yes
3rd year: Yes

DESK AVAILABILITY:
1st year: Yes
2nd year: Yes
3rd year: Yes