Neuromorphic architectures: a bridge between neurosciences and embedded artificial intelligence

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Résumé

Artificial neural networks, inspired by the formidable capacities of the biological brain, have been constantly being refined, regularly opening new fields of application (computer vision, machine learning, artificial intelligence, sensory substitution, etc.). Several electronic substrates are currently being studied and offer interesting compromises to achieve, on the one hand, the promises of energy efficiency of natural models and on the other hand the technological maturity and the programming capacities expected by the application domains. The design of neuromorphic architectures in these different technologies must address several challenges that we will identify, and we will discuss how the electronic solutions studied at the LEAT laboratory (UNS) explore both the energy efficiency of several neural models and the principles of brain-inspired computing.

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