

**Artificial intelligence within the interplay between natural and artificial computation:  
Advances in data science, trends and applications**

**Título** Artificial intelligence within the interplay between natural and artificial computation: Advances in data science, trends and applications

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**Abstract** © 2020 Elsevier B.V. Artificial intelligence and all its supporting tools, e.g. machine and deep learning in computational intelligence-based systems, are rebuilding our society (economy, education, life-style, etc.) and promising a new era for the social welfare state. In this paper we summarize recent advances in data science and artificial intelligence within the interplay between natural and artificial computation. A review of recent works published in the latter field and the state the art are summarized in a comprehensive and self-contained way to provide a baseline framework for the international community in artificial intelligence. Moreover, this paper aims to provide a complete analysis and some relevant discussions of the current trends and insights within several theoretical and application fields covered in the essay, from theoretical models in artificial intelligence and machine learning to the most prospective applications in robotics, neuroscience, brain computer interfaces, medicine and society, in general.

**Palabras clave** AI for social well-being, Alzheimer, Artificial intelligence (AI), Artificial neural networks (ANNs), Autism, Big data, Computational neuroethology, Deep learning, Dyslexia, Emotion recognition, Evolutionary computation, Glaucoma, Human-machine inter

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