1. Record Nr. UNINA9910136405303321

Autore	Marc Wittmann
Titolo	Towards embodied artificial cognition: TIME is on my side
Pubbl/distr/stampa	Frontiers Media SA, 2015
Descrizione fisica	1 online resource (132 p.)
Collana	Frontiers Research Topics
Soggetti	Neurosciences
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia

Sommario/riassunto

From the moment of birth, humans and animals are immersed in time: all experiences and actions evolve in time and are dynamically structured. The perception of time is thus a capacity indispensable for the control of perception, cognition and action. The last 10 years have witnessed a remarkable resurgence of interest in timing and time perception, with a continuously increasing number of researchers exploring these innate abilities. However, existing robotic systems largely neglect the key role of time in cognition and action. This is a major barrier for accomplishing the long-term goal of symbiotic human-robot interaction. The critical question is: how is time instantiated in a biological system and how can it be implemented in an artificial system? Recent years have for example seen an increasing focus on the relationship between affective states and the experience of time. The influence of affective states on subjective time seems to depend on the embodiment of emotions: intertwined affective and interoceptive states may create our subjective experience of time. Since robotic systems are in essence embodied information-processing systems that interact with the real world, we hope to inspire a reciprocal exchange of ideas between the field of Robotics and the Cognitive Neurosciences. In this research topic, we call researchers from different disciplines (Robotics, Neurosciences, and Psychology) to present their empirical work, their models or reviews on the question of how time judgments are instantiated in biological and artificial

systems. Of particular interest are papers on time perception in humans and animals, with a focused interest on embodied time perception, i.e. the influence of affective and body states on time judgments. Moreover, the present Research Topic seeks to gather papers discussing the key role of time on different aspects of robotic cognition as well as modeling approaches. We are interested in paving the way for a new generation of intelligent computational systems that incorporate the sense of time in their processing loop and thus accomplish more efficient and more advanced cognitive capacities.