عنوان مقاله:

Practical applications of spiking neural network in information processing and learning

محل انتشار:

مجله بین المللی پیشرفت در علوم کامپیوتر, دوره 4, شماره 4 (سال: 1394)

تعداد صفحات اصل مقاله: 5

نویسندگان:

Fariborz Khademian - *Physics Department, Babol Noshirvani University of Technology,Babol, Iran*

Reza Khanbabaie - *Physics Department, Babol Noshirvani University of Technology,Babol, Iran*

خلاصه مقاله:

Historically, much of the research effort to contemplate the neural mechanisms involved in information processing in the brain has been spent with neuronal circuits and synapticorganization, basically neglecting the electrophysiological properties of the neurons. In this paper we present instances of apractical application using spiking neurons and temporal coding to process information, building a spiking neural network – SNNto perform a clustering task. The input is encoded by means ofreceptive fields. The delay and weight adaptation uses a multiple synapse approach. Dividing each synapse into sub-synapses, eachone with a different fixed delay. The delay selection is then performed by a Hebbian reinforcement learning algorithm, also keeping resemblance with biological neural networks

کلمات کلیدی:

Information processing, Spiking neural network, Learning