

عنوان مقاله:

Neuron and neuro-computational feature, and their survey in the Morris-Lecar neuron model

محل انتشار:

دومین کنفرانس مکانیک، برق، مهندسی هوافضا و علوم مهندسی (سال: 1401)

تعداد صفحات اصل مقاله: 17

نویسنده:

Parnian Afzali - Department of Electrical engineering, south Tehran branch, Islamic Azad University, Tehran, Iran

خلاصه مقاله:

In this article, we introduce the biological neuron as the main cell of the nervous system and survey its various behavioral features. First, we present a comprehensive definition of neurons, and after explaining the components of neurons and their types, we describe the mechanism of neurons and their unique characteristics as a dynamic system. In this study, we peruse ۲۰ of the most prominent features of biological spiking neurons which show the richness and complexity of the spiking behavior of individual neurons. Each spiking neuron model has several neuro-computational properties. According to their behavior, each model can be used for a specific purpose. Then, there is a table to compare neuron models in terms of the biological behavior of neurons. At the end of this paper, we present the Morris-Lecar neuron model that is one of the spiking neuron models with a two-dimensional differential equation. To show its ۱۳ neuro-computational features, we simulate this model in Matlab for different applied currents

کلمات کلیدی:

Biological neuron, Neuro-computational properties, Characteristics of neuron, Spiking neuron model, Morris-Lecar neuron model

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1448429>

