Title (en)

A SPIKING NEURAL NETWORK FOR PROBABILISTIC COMPUTATION

Title (de)

GEPULSTES NEURONALES NETZWERK ZUR PROBABILISTISCHEN BERECHNUNG

Title (fr)

RÉSEAU NEURONAL À IMPULSIONS POUR CALCUL PROBABILISTE

Publication

**EP 3908982 A1 20211117 (EN)**

Application

**EP 19782857 A 20190920**

Priority

- US 201962790296 P 20190109
- US 2019052275 W 20190920

Abstract (en)

[origin: WO2020146016A1] Described is a system for computing conditional probabilities of random variables for Bayesian inference. The system implements a spiking neural network of neurons to compute the conditional probability of two random variables X and Y. The spiking neural network includes an increment path for a synaptic weight that is proportional to a product of the synaptic weight and a probability of X, a decrement path for the synaptic weight that is proportional to a probability of X, Y, and delay and spike timing dependent plasticity (STDP) parameters such that the synaptic weight increases and decreases with the same magnitude for a single firing event.

IPC 8 full level

**G06N 3/04** (2006.01); **G06N 3/063** (2006.01); **G06N 3/08** (2006.01)

CPC (source: EP)

**G06N 3/047** (2023.01); **G06N 3/049** (2013.01); **G06N 3/063** (2013.01); **G06N 3/088** (2013.01)

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

**WO 2020146016 A1 20200716**; CN 113196301 A 20210730; CN 113196301 B 20240618; EP 3908982 A1 20211117

DOCDB simple family (application)

**US 2019052275 W 20190920**; CN 201980080848 A 20190920; EP 19782857 A 20190920