



Call for Papers for the Special Session

Neuromorphic Computing

for Cloud, Edge and IoT

Aim and scope of the special session

AI technologies are a powerful tool to handle unstructured cognitive data such as voices, images, videos, and texts. However, as the scale of AI models and cognitive data become bigger and bigger, current implementations by software and general-purpose processors require large power and computer resources due to the limitation of downscaling of traditional CMOS technology and bottleneck of von-Neumann architecture.

To address the power and performance constraints, acceleration by neuromorphic computing is a promising approach. In fact, various types of neuromorphic computing with non von-Neumann architecture have been reported so far, based on digital/analog electronics, photonics, and other physics such as materials, mechanics and quantum. The goal of the special session is to accelerate the development of such neuromorphic computing toward industrial applications, through open discussion among algorithm, architecture, and application researchers from diverse backgrounds.

List of candidate topics

The main topics of this special session include but not limited to

- 1) Algorithms for neuromorphic computing, spiking neural networks, deep learning, reservoir computing, etc.
- 2) Architecture for neuromorphic computing systems, digital/analog electronics, photonics, materials, mechanics and quantum, physical reservoir computing, etc.
- 3) Applications for cloud, edge and IoT systems. sensor data analytics, surveillance, anomaly detection, autonomous vehicles and robots,

intelligent networking systems, machine-to-machine(M2M) communications, etc.

Submission Instructions and important dates

Prospective authors should follow the guidelines of IJCNN 2023.

<https://2023.ijcnn.org/authors/paper-submission>

Paper Submission Deadline: January 31, 2023

Paper Decision Notification: March 31, 2023

Place and Date: Queensland, Australia. 18-23 June 2023.

Special session organizers (* primary contact)

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