## **AICAS 2022 Exhibition Introduction**

Please send the company introduction or description of exhibition to AICAS 2022 secretariat. If you don't have any materials, please fill out this 'Exhibition Introduction'. the company introduction and exhibition introduction will be uploaded with company CI on the online exhibition page on the website. We recommend a **pdf file format** for materials. Thank you for cooperation.

Company Name	KIST (Korea Institute of Science and Technology)
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Exhibit item	Neo <sup>2</sup> C: KIST's on-chip learning neuromorphic processor
Introduction	

## Introduction

## < Description of exhibition >

In this exhibition, we present KIST's self-learning neuromorphic processor called Neo<sup>2</sup>C and its online learning demonstration video. The Neo<sup>2</sup>C chip is a specialized digital neuromorphic IC for simulating large-scale spiking neural network (SNN) algorithms. It features on-chip learning based on spike-timing-dependent plasticity (STDP) and enables users to arbitrarily program the configuration of the neural network. The Neo<sup>2</sup>C chip is fabricated in 55 nm CMOS process and includes 1,024 neurons and 199,680 synapses. The demonstration video shows when bar images with arbitrary angles are given as inpur every 200 ms, the neural network of the Neo<sup>2</sup>C chip is trained in real-time to have selectivity for a specific angle.