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brainchip
The Neuromorphic Computing Company

BrainChip's Akida Development Environment Now Freely Available for Use

Develop and Deploy on Akida Deeply Learned Neural Networks in a standard TensorFlow/Keras Environment

SAN FRANCISCO--(BUSINESS WIRE)-- BrainChip Holdings Ltd. (ASX: BRN), a leading provider of ultra-low power, high-performance edge AI technology, today announced that access to its Akida™ Development Environment (ADE) no longer requires pre-approval, now allowing designers to freely develop systems for edge and enterprise products on the company's Akida Neural Processing technology.

ADE is a complete, industry-standard machine learning framework for creating, training and testing deeply learned neural networks. The platform leverages TensorFlow and Keras for neural network development, optimization and training. Once the network model is fully trained, the ADE includes a simple-to-use compiler to map the network to the Akida fabric and run hardware accurate simulations on the Akida Execution Engine. The framework uses the Python scripting language and its associated tools and libraries, including Jupyter notebooks, NumPy and Matplotlib. With just a few lines, developers can easily run the Akida simulator on industry-standard datasets and benchmarks in the Akida model zoo such as Imagenet1000, Google Speech Commands, MobileNet among others. Users can easily create, modify, train and test their own models within a simple use development environment.

ADE comprises three main Python packages:

- the Akida Execution Engine including the [Akida Simulator](#) is an interface to the BrainChip Akida neural processing hardware. To allow the development, optimization and testing of Akida models, it includes a software backend that simulates the Akida NSoC. The output of the Akida Execution Engine generates all necessary files to run the Akida neural processor hardware as well.
- the [CNN development tool](#) utilizes TensorFlow/Keras to develop, optimize and train deeply learned neural networks such as CNNs
- the [Akida model zoo](#) contains pre-created neural network models built with the Akida sequential API and the CNN development tool using quantized Keras models.

"The enormous success of our early-adopters program allowed us to make ADE available to developers looking to use an Akida-based environment for their deep machine learning needs," said Louis DiNardo, CEO of BrainChip. "This is an important milestone for BrainChip as we continue to deliver our technology to a marketplace in search of a solution to overcome the power- and training-intense needs that deep learning networks currently require. With the ADE, designers can access the tools and resources needed to develop and deploy Edge application neural networks on the Akida neural processing technology."

Akida is available as a licensable IP technology that can be integrated into ASIC devices and will be available as an integrated SoC, both suitable for applications such as surveillance, advanced driver assistance systems (ADAS), autonomous vehicles (AV), vision guided robotics, drones, augmented and virtual reality (AR/VR), acoustic analysis, and Industrial Internet-of-Things (IoT). Akida is a complete neural processing engine for edge applications, which eliminates CPU and memory overhead while delivering unprecedented efficiency, faster results, at minimum cost. Functions like training, learning, and inferencing are orders of magnitude more efficient with Akida.

Access to ADE is currently available online at https://doc.brainchipinc.com/. Among the resources are installation information, user guide, API reference, Akida examples, support and license documentation. ADE requires TensorFlow 2.0.0. Any existing virtual environment previously used would need to be updated as per the installation step.

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About BrainChip Holdings Ltd (ASX: BRN)

BrainChip is a global technology company that has developed a revolutionary advanced neural networking

processor that brings artificial intelligence to the edge in a way that existing technologies are not capable. The solution is high performance, small, ultra-low power and enables a wide array of edge capabilities that include local training, learning and inference. The Company markets an innovative event-based neural network processor that is inspired by the spiking nature of the human brain and implements the network processor in an industry standard digital process. By mimicking brain processing BrainChip has pioneered an event domain neural processor, called Akida™, which is both scalable and flexible to address the requirements in edge devices. At the edge, sensor inputs are analyzed at the point of acquisition rather than transmission to the cloud or a datacenter. Akida is designed to provide a complete ultra-low power AI Edge Network for vision, audio and smart transducer applications. The reduction in system latency provides faster response and a more power efficient system that can reduce the large carbon footprint datacenters. Additional information is available at https://www.brainchipinc.com.

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