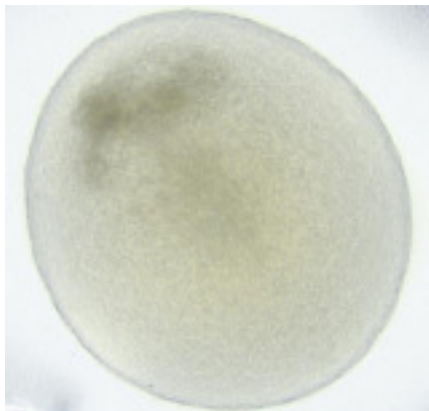Vevey, Switzerland, September 10, 2020, 08:00 CET

AlpVision SA, a global leader in advanced signal processing applications, just announced at the 2020-Intelligent Health Summit that the online access to the real-time electrical activity of living neurons is now available on BioServer.net (https://bioserver.net/live), AlpVision proprietary platform.

As announced by AlpVision's CEO, Dr. Fred Jordan and AlpVision's President, Dr. Martin Kutter, BioServer.net aims to facilitate the research on advanced software algorithms using living neurons, by making it possible to perform them without the direct access to expensive lab facility. This brings a unique opportunity for worldwide experimental research on software and neuronal signaling applications to anyone interested in the subject. Access to Bioserver.net also opens the way for development of low-energy consumption advanced computing units, made of real neural networks as opposed to the silicon-based artificial neural networks.

BioServer.net was created by integrating living neuronal cell cultures, electrical hardware, signal processing tools and internet frontend technologies. The neurons are obtained by a differentiation of human Induced Pluripotent Stem Cells. Differentiated neuronal cells are grouped together in order to form a spheroid shape built of 100'000 to 1'000'000 neurons and of about 500 micrometers of diameter. Electrodes are used to enable bidirectional communication between the living neurons and artificial hardware. The ultimate goal of these neuron-based Biological Neural Networks is to achieve sophisticated tasks that are impossible using traditional silicon-based methods, for example the current deep learning algorithms.

This initiative is at the intersection of neuroscience, computer science and hardware design. It shares some similarities with the NeuralLink project undertaken by Elon Musk. Both projects share a similar ambition of combining biological power with hardware in order to open new possibilities. However, BioServer.net focuses specifically on *in vitro* cultures. The ultimate objective of the project is to achieve specific technical functions, such as building tools with superior computation capabilities and to provide low energy data computation.

The next steps in the BioServer.net development is to implement an API for programmers to enable direct performance of read/write operations remotely from their source code and potentially integrate those function calls with standard TensorFlow/PyTorch operations.

Bioserver.net

For further information please contact:
Fred Jordan
Rue du Clos 12, 1800, Vevey, Switzerland
avinfo-20@alpvision.com
+41 21 948 64 64