

A Neural Network Inside a Stick

Written by Marco Attard
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Silicon Valley chip maker Movidius presents what amounts to a supercomputer inside a USB stick-- the Fathom Neural Compute Stick, a device the company describes as "the world's first embedded neural network accelerator."



Neural networks are used for sophisticated computing tasks, such as identifying and analysing objects or the mapping of 3D spaces for augmented or mixed reality navigation. Movidius is a specialist in the field, being the company behind the technology allowing the DJI Phantom 4 drone to avoid collisions.

The technology in question is the Movidius Myriad 2 MA2450 chip-- and it is the same found inside the Fathom stick (as paired with 512MB of LPDDR3 RAM). How did Movidius manage to boil down a neural network in such a small package? The answer lies in architecture designed specifically for running the aforementioned environmental analysis tasks at under 1W of power. However, one has to keep in mind the stick can do nothing else.

Being such a specialist device, the device should allow curious customers to build gadgets armed with machine vision for navigation purposes, or prototype AR hardware. Operation requires plugging the stick into the USB 3.0 port of any Linux-based system, and the result should provide "20-30x performance improvement in neural compute."

Of course, actually using the Fathom stick is not not for the faint of heart-- it requires deep learning frameworks such as Caffe and TensorFlow, as well as the associated datasets. But the device can still be described as a consumer offering since it costs around \$100, making it available for pretty much anyone.

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"Very soon, consumers are going to be introduced to surprisingly smart applications and products," Movidius says. "It means the same level of surprise and delight we saw at the beginning of the smartphone revolution; we're going to see again with the machine intelligence revolution."

The Fathom stick will be available from Q4 2016.

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