Boson thermal camera core offers enhanced capabilities

21 April 2016, by Nancy Owano

Thermal imaging and machine vision applied to pedestrian and vehicle counting to understand traffic flows. Thermal imaging performs well in various weather and light conditions, in addition to being able to easily differentiate the background from live subjects through heat signatures.

FLIR Systems and Movidius have pulled off a mix of a thermal imaging camera core with powerful attributes. The debut of Boson involves a hardware combo of infrared camera with a Movidius vision processing unit (VPU). Movidius signed the partnership deal with FLIR Systems to create this thermal imaging solution.

This is all about "intelligent" thermal imaging. Don Reisinger in *PCMag* talked about the concept. "The idea behind the partnership is simple: for cameras to understand what they're looking at. While Flir already has the ability to see thermal images, the addition of the Movidius Myriad 2 gives it some context. In other words, the camera core will be able to give the computer running inside the camera some information on what it might be seeing."

The news release describes the combo as FLIR's Long Wave Infrared (LWIR) technology and Movidius' VPU into a single thermal imaging core.

The combination signifies a time when it is proven possible to enable advanced image processing at low power dissipation and to bring artificial intelligence to thermal imaging products.

The new infrared camera core was launched at a Baltimore exhibition, reported *optics.org* on Wednesday. This is an innovative IR camera, and by far the company's smallest, wrote Ford Burkhart in *optics.org*.

"This one is four times smaller than the previous generation, which was the Tau camera core, [and] which FLIR is still selling," said Pierre Boulanger, FLIR's CTO, in *optics.org*.

Movidius' Myriad 2 VPU is able to perform very advanced calculations on vision data at a very high speed. This is system level functionality in the same package.

Jon Fingas in *Engadget* commented on the computer vision tasks at play: "think object detection, depth calculations and other tasks that normally rely on external computing power."

The promotional video notes said that "Boson will break new ground in providing artificial intelligence functions to security, search and rescue, heavy industry and leisure applications of thermal imaging."

The product strategy: FLIR will sell the Boson as a component, said *optics.org*. This is where things will get interesting. Fingas commented that "its mix of AI and compact size could bring smart thermal imaging to gadgets where it's not normally practical, such as home security systems, drones and military gear."

(In general, FLIR's thermal camera cores are designed for easy integration into higher level assemblies and platforms. Original equipment manufacturers (OEMs) design and integrate FLIR's core modules into systems manufactured and sold under their own company name or product brand.)

Burkhart in *optics.org* said some use examples might include using infrared imaging to look at moisture inside a house, or to mount on a small UAV (unmanned aerial vehicle) to fly over a house to seek if it is leaking heat.

As for Movidius, their end of the partnership reflects their mission since they started up: "Not seeing any availability of programmable, ultra-low power vision chip designs on the market, we took it upon ourselves to create this missing link in embedded visual computing," according to the company. They said they "embraced parallelism in order to achieve a programming methodology and architecture that achieved a 'sweet spot' in terms of a sub-one watt power dissipation for demanding workloads."

More information:
www.flir.fr/cores/content/?id=74595

APA citation: Boson thermal camera core offers enhanced capabilities (2016, April 21) retrieved 17 January 2022 from https://techxplore.com/news/2016-04-boson-thermal-camera-core-capabilities.html