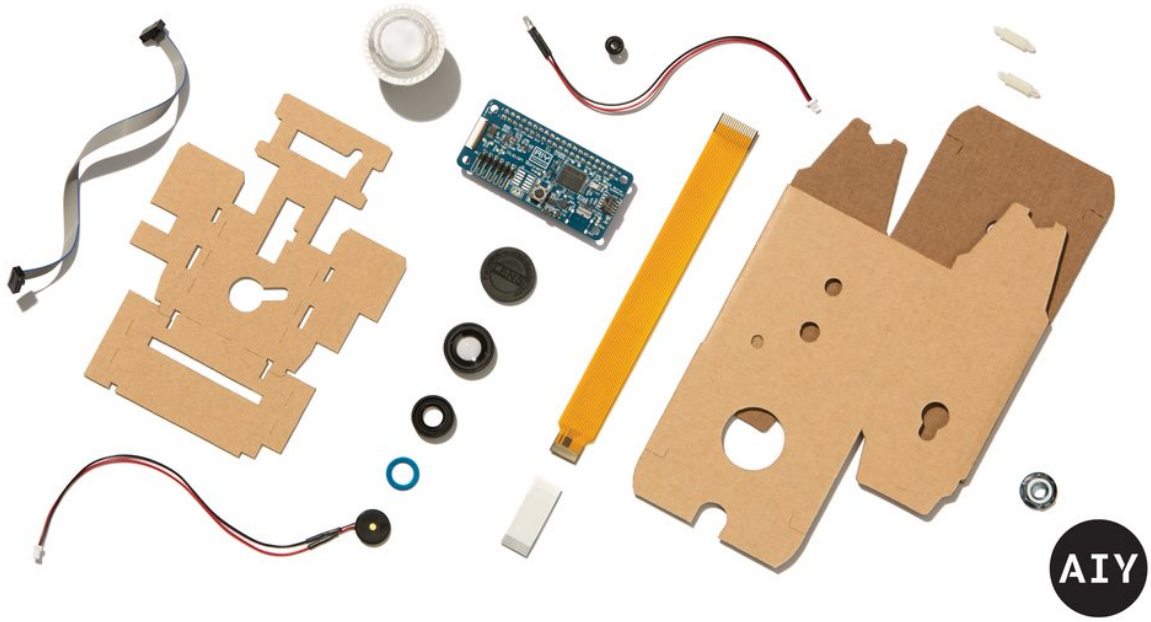
Vision kit will bring new pizzazz to Raspberry Pi projects

December 2 2017, by Nancy Owano



(Tech Xplore)—Some tinkerers are already talking about what's to come soon in the Google AIY Vision Kit, which is available on pre-order from Micro Center at $44.99. Expected availability is by December 31.

It is interesting for tinkerers in that it is a build it yourself kit to add

image recognition and computer vision features to Raspberry Pi Zero W based projects.

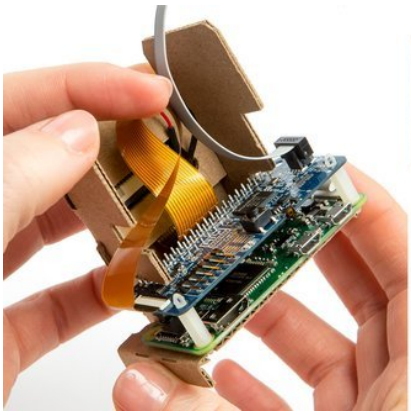
The Micro Center pre-order page had this to say about the kit: "With the AIY Vision Kit from Google, you can add image recognition and computer vision features to your Raspberry Pi Zero W based projects. Bring your project to life using a camera and our AIY Vision Bonnet, featuring on-device neural network acceleration - no internet connection required."

The pre-order page also said that "Google includes fully-trained computer vision models, based on MobileNets, that can recognize over a thousand common objects and facial expressions."

What is AIY? It stands for the Artificial Intelligence Yourself (AIY) Projects initiative. These projects began earlier this year, with the goal of helping makers experiment with and learn about artificial intelligence.

(Their debut release was AIY Voice Kit and projects showed what was possible in voice recognition-maker projects.)

The new product also falls under the AIY umbrella and it is called Vision Kit. Billy Rutledge, director, AIY Projects, spoke about it on Google's "Machine Learning" blog. He said it is their first project that features "on-device neural network acceleration."



So with the kit, a Raspberry Pi Zero W and its camera become a neural network vision system.

Harry Fairhead, *I Programmer*: "The AIY Vision Kit is based on the Intel Movidius MA2450 vision processing unit, which is capable of implementing trained neural networks."

Billy Rutledge, director, AIY Projects, said the kit's main component was the VisionBonnet board for Raspberry Pi. The bonnet features the Intel Movidius MA2450. Rutledge described the latter as "a low-power vision processing unit capable of running neural network models on-device."

Fairhead took notice that "no cloud connection is needed as all computations are done in the box!" Fairhead said that while the computation is all done onboard, "Google has provided the TensorFlow code to train new models."

What's everything in the kit? The list presents button harness; the

cardboard subframe; RGB arcade style pushbutton; privacy LED; piezo speaker; combo macro/wide lens kit; VisionBonnet; camera flex cables; cardboard camera form; plastic standoffs; and tripod mounting nut.

What you will need are the Raspberry Pi Zero W board; Raspberry Pi Camera 2; Raspberry Pi Zero W compatible power supply; and Micro SD card.

What can all this accomplish?

Rutledge had some answers in the blog: "Identify all kinds of plant and animal species; see when your dog is at the back door; when the car left the driveway; see that guests "are delighted by your holiday decorations," and "see when your little brother comes into your room."

More information: blog.google/topics/machine-lea … it-make-devices-see/