



Euresys adds EasyLocate to suite of powerful image analysis libraries

EasyLocate

The Open eVision Libraries from Euresys are some of the powerful image analysis libraries and software tools available in the machine vision market today. And now the next iteration of its Deep Learning libraries, EasyLocate, will soon be launched, joining existing products such as EasySegment and EasyClassify. Euresys CEO Marc Damhaut introduces us to EasyLocate and tells how it fits-in with the rest of the product range.

Euresys has been on a journey for a number of years now, producing some of the most powerful image libraries and software tools, for which we are recognised throughout the machine vision industry.

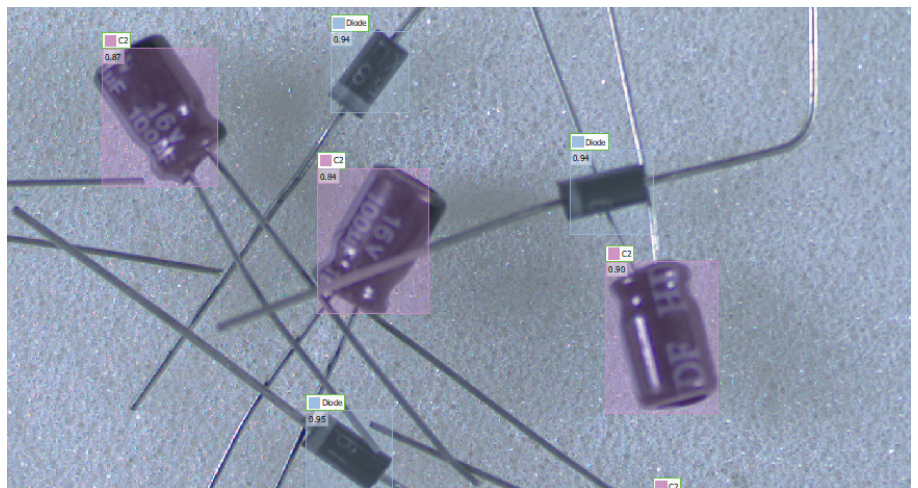
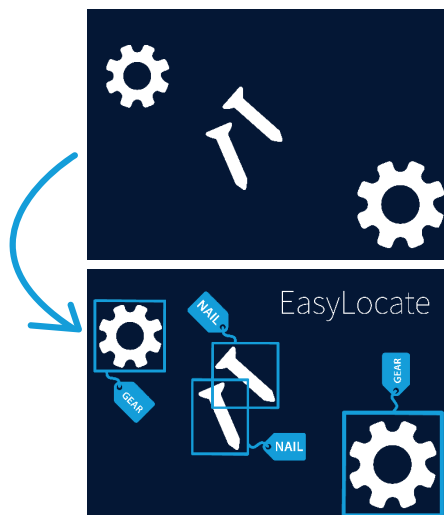
EasyLocate is our latest library and one which the team and I are justly proud of. It completes a range of image processing and analysis libraries that are in regular use with our extensive customer base, mostly machine manufacturers who supply the semiconductor and electronics industries.

Object detection

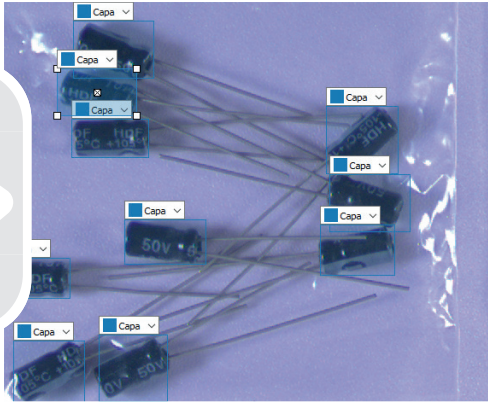
EasyLocate will be launched as part of Open eVision 2.15 and it can be used to locate and identify objects, products, or defects. It has the capability of distinguishing overlapping objects and, as such, EasyLocate is suitable for counting the number of object instances. EasyLocate, based on Deep Learning algorithms, works by learning from examples.

In practice, EasyLocate predicts the bounding box surrounding each object, or defect, it has found in the image and assigns to each bounding box a class label. It must be trained with images where the objects or defects that must be found have been annotated with a bounding box and a class label.

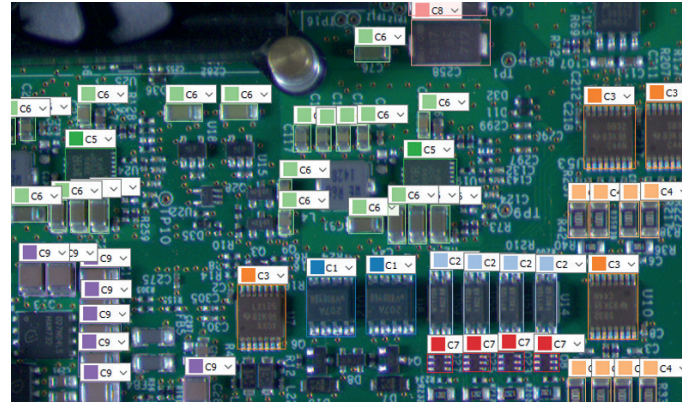
One of the main benefits of EasyLocate is that we designed a deep learning network architecture targeted specifically towards industrial machine vision application. It is inspired from state-of-the-art architectures such as YOLO and RetinaNet.



Actual object recognition and tag



Tolerant to sub-optimal object exposure



Allowing multiple objects recognition

Deep Learning Bundle

EasyLocate is part of the Deep Learning bundle of Open eVision. The Deep Learning bundle also includes **EasyClassify**, a library for the classification of images, that is used for defect detection and product recognition. The user of our Deep Learning bundle can also lean on the abilities offered by the **EasySegment library**, which is designed to ease the process of segmenting objects and defects. In unsupervised mode, it is used for defect segmentation. It is 'trained' with only good images and then segments the parts that differ from the standard model. In supervised mode, it can segment anything, including objects and defects. It requires a ground truth segmentation mask for each training image.

Free Evaluation

In addition, the free Deep Learning Studio application is a key element of the offering. It is set up for fast dataset annotations and the training and evaluation of eVision's Deep Learning tools by and within the customer environment.

What our customers appreciate is that the Deep Learning Studio is free to download from Euresys web site and that no license is needed. This allows them to evaluate the performance of the eVision tools with actual images from their own customers, solving any potential confidentiality issue.

Runs on the GPU and CPU

Another major benefit is that EasyLocate runs on the CPU, or with NVIDIA GPUs, for faster training and inference. That said, EasyLocate's neural network has been specifically designed and optimized such that some applications may only need CPU for inference.

What's Next?

EasyLocate support for Linux (Intel x64 platform) is coming in 2021. New features and upgrades will include, before the year-end, possible support for oriented bounding boxes, key point localization and arbitrary image resolution. And throughout 2021 there will also be continuous improvements to the Deep Learning Studio.

The Future

We have high hopes for the future of EasyLocate - the feedback, after our initial customer presentations, has been very encouraging. And two main benefits have been identified as game changers. Firstly, the library is very easy to use and fits seamlessly into a customer's application. Secondly, with EasyLocate, the customer has time to evaluate the library, before they commit to a license payment. This is a major differentiating benefit to our customers, as with other products on the market, there is no opportunity to first evaluate them and see if they are appropriate for the machine considered.

EasyLocate is set for a great future and we are very excited that Open eVision 2.15 is further growing into a rounded and extensive product.

Marc DAMHAUT is CEO of Euresys, a leading and innovative high-tech company, designer and provider of image and video acquisition components, frame grabbers, FPGA IP cores and image processing software. Markets include computer vision, machine vision, factory automation, medical imaging and video surveillance markets. It is headquartered in Belgium, with offices in Germany, US, Singapore, China and Japan.