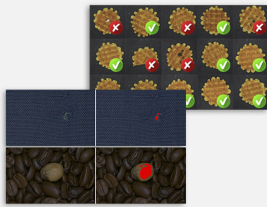




# Deep Learning Bundle

Convolutional Neural Network-based inspection libraries



## At a Glance

- Includes EasyClassify and EasySegment
- Supports data augmentation and masks
- Compatible with CPU and GPU processing
- Includes the free Deep Learning Studio application for dataset creation, training and evaluation

## Benefits

### What Is Deep Learning ?

Neural Networks are computing systems inspired by the biological neural networks that constitute the human brain. Convolutional Neural Networks (CNN) are a class of deep, feed-forward artificial neural networks, most commonly applied to analyzing images.

Deep Learning uses large CNNs to solve complex problems difficult or impossible to solve with so-called conventional computer vision algorithms. Deep Learning algorithms may be easier to use as they typically learn by example. They do not require the user to figure out how to classify or inspect parts. Instead, in an initial training phase, they learn just by being shown many images of the parts to be inspected. After successful training, they can be used to classify parts, or detect and segment defects.

### Why Choose Open eVision's Deep Learning Bundle?

- Deep Learning Bundle has been tailored, parametrized and optimized for analyzing images, particularly for machine vision applications.
- Deep Learning Bundle has a simple API and the user can benefit from the power of deep learning technologies with only a few lines of code.
- Try before you buy: Deep Learning Bundle comes with the free Deep Learning Studio training and evaluation application.

EasyClassify and EasySegment cannot be purchased separately. They are only available as part of the Deep Learning Bundle.

<br>Download and evaluate Deep Learning Bundle using Deep Learning Studio today, and feel free to call Euresys' support should you have any question.

### Deep Learning Studio

Open eVision includes the free Deep Learning Studio application. This application assists the user during the creation of the dataset as well as the training and testing of the deep learning tool.

### Performance

Deep Learning generally requires significant amounts of processing power, especially during the learning phase. Deep Learning Bundle supports standard CPUs and automatically detects Nvidia CUDA-compatible GPUs in the PC. Using a single GPU typically accelerates the learning and the processing phases by a factor of 100.

## Developed with the support of the DG06 Technology Development Department

### Applications

#### Machine Vision for the Electronic Manufacturing Industry

- Mark inspection
- LED inspection

#### Machine Vision for the General Manufacturing Industries

- Presence / Absence check
- Surface analysis
- Assembly inspection
- Code quality verification for label printing machines

#### Machine Vision for the Food Inspection Industry

- Food inspection and sorting

### Specifications

#### Software

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##### Host PC Operating System

- Open eVision is a set of 32-bit and 64-bit libraries that require a processor compatible with the SSE2 instruction set.
  - Deep Learning Bundle is only available in the 64-bit Open eVision library.
  - Open eVision can be used on the following operating systems:
    - Windows 10 (32- and 64-bits)
    - Windows 8 (32- and 64-bits)
    - Windows 7 (32- and 64-bits)
  - Since Open eVision 2.6, discontinued support of:
    - Windows Vista 32-bits Service Pack 1
    - Windows XP 32-bits Service Pack 3
    - Windows Embedded Standard 2009 32-bits
  - The Open eVision installer does not allow installation on virtual machines.
  - Minimum requirements:
    - RAM: 8 GB
    - Display size: 800 x 600. 1280 x 1024 recommended.
    - Color depth: 16 bits. 32 bits recommended.
    - Between 100 MB and 2 GB free hard disk space for libraries, depending on selected options.
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## APIs

- Supported Integrated Development Environments and Programming Languages:
    - Microsoft Visual Studio .NET 2003 SP1 (C++)
    - Microsoft Visual Studio 2005 SP1 (C++, C#, VB .NET, C++/CLI)
    - Microsoft Visual Studio 2008 SP1 (C++, C#, VB .NET, C++/CLI)
    - Microsoft Visual Studio 2010 (C++, C#, VB .NET, C++/CLI)
    - Microsoft Visual Studio 2012 (C++, C#, VB .NET, C++/CLI)
    - Microsoft Visual Studio 2013 (C++, C#, VB .NET, C++/CLI)
    - Microsoft Visual Studio 2015 (C++, C#, VB .NET, C++/CLI)
    - Microsoft Visual Studio 2017 (C++, C#, VB .NET, C++/CLI)
  - Since Open eVision 2.6, discontinued support of:
    - Microsoft Visual Studio 6.0 SP6 (C++, Basic)
    - Borland C++ Builder 6.0 update 4 (C++)
    - CodeGear C++ Builder 2009 (C++)
    - CodeGear Delphi 2009 (Object Pascal)
    - Embarcadero RAD Studio XE4 (C++, Object Pascal)
    - Embarcadero RAD Studio XE5 (C++, Object Pascal)
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## Ordering Information

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### Product code - Description

- 4182 - Open Deep Learning Bundle for USB dongle
  - 4232 - Open Deep Learning Bundle for PAR dongle
  - 4282 - Open Deep Learning Bundle for soft-based licensing
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