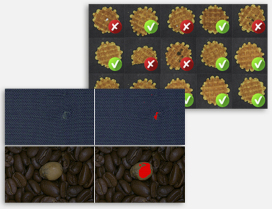
euresys
Empowering Computer Vision

EasyDeepLearning

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 EasyDeepLearning 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 EasyDeepLearning?

- EasyDeepLearning has been tailored, parametrized and optimized for analyzing images, particularly for machine vision applications.
- EasyDeepLearning 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: EasyDeepLearning comes with the free EasyDeepLearning Studio training and evaluation application.

Download and evaluate EasyDeepLearning using EasyDeepLearning Studio today, and feel free to call Euresys' support should you have any question.

EasyDeepLearning Studio

Open eVision includes the free EasyDeepLearning 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. EasyDeepLearning 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 of100.

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

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. • The EasyDeepLearning library 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.

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)

Ordering Information

Product code - Description	• 4182 - Open EasyDeepLearning for USB dongle • 4232 - Open EasyDeepLearning for PAR dongle • 4282 - Open EasyDeepLearning for soft-based licensing

EMEA

Euresys SA

Liège Science Park - Avenue du Pré Aily, 14
4031 Angleur - Belgium

Phone: +32 4 367 72 88
Email: sales.europe@euresys.com

EMEA

Sensor to Image GmbH

Lechtorstrasse 20 -
86956 Schongau - Germany

Phone: +49 8861 2369 0
Email: sales.europe@euresys.com

AMERICA

Euresys Inc.

27126-B Paseo Espada - Suite 704
San Juan Capistrano, CA 92675 - United States

Phone: +1 949 743 0612
Email: sales.americas@euresys.com

ASIA

Euresys Pte. Ltd.

750A Chai Chee Road - #07-15 Viva Business Park
Singapore 469001 - Singapore

Phone: +65 6445 4800
Email: sales.asia@euresys.com

CHINA

Euresys Shanghai Liaison Office

Unit 802, Tower B, Greenland The Center - No.500 Yunjin Road, Xuhui District
200232 Shanghai - China
Euresys上海联络处
上海市徐汇区云锦路500号绿地汇中心B座802室
200232

Phone: +86 21 33686220
Email: sales.china@euresys.com

JAPAN

Euresys Japan K.K.

Expert Office Shinyokohama - Nisso Dai 18 Building, Shinyokohama 3-7-18
Kouhoku-Ku, Yokohama-Shi 222-0033 - Japan
〒222-0033
神奈川県横浜市港北区新横浜3-7-18 日総第18ビル　エキスパートオフィス新横浜

Phone: +81 45 594 7259
Email: sales.japan@euresys.com

More at www.euresys.com