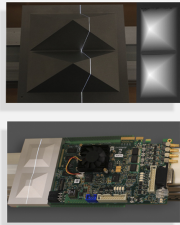


Easy3DLaserLine

3D laser line extraction and calibration library

둘러보기



- Single and Dual Laser Line Extraction into a depth map
- Convenient and powerful 3D calibration for laser triangulation setups
- Compatible with the Coaxlink Quad 3D-LLE frame grabber

장점

Easy3DLaserLine Description

- With Easy3DLaserLine, you will be able to implement a high-precision calibrated laser line triangulation setup.
- Easy3D is required for all 3D developments and is included in the Easy3DLaserLine license.

3D 레이저 라인을depth 맵으로 추출

Easy3D generates a depth map from a series of images that contain a laser line projected on the inspected object. Each pixel of the resulting depth map contains the position of the laser line in the image. Several extraction modes are supported as well as various filters. The software line extractor is fully compatible with the hardware implementation in the Coaxlink Quad 3D-LLE frame grabber.

Dual laser line extraction

Supported by software and hardware implementations, the dual laser line extraction process reduces the effect of occlusions. Occlusions occur when some parts of the objects are not lit by any laser. Using two lasers with different angles reduces these undefined areas. The object-based calibration included in Easy3DLaserLine allows combining the acquired data into a single calibrated point cloud.

캘리브레이션

일부 프로세싱은depth 맵에서 직접 수행될 수 있습니다. 그러나, 대부분의 3D 측정에 왜곡 없는 데이터 및 매트릭 표현이 필요하므로, 광삼각법 셋업에 대한 보정이 필요합니다. Easy3D는depth 맵에 적용되는 캘리브레이션 모델을 컴퓨팅하여 보정된 3D 포인트 클라우드로 변환합니다.

This calibration model is based on the depth map of a reference object, acquired using the laser triangulation setup that requires calibration.

DG06 기술 개발 부서의 지원으로 개발

애플리케이션

전자제품 제조산업용 머신 비전

- PCB 검사
- LED 검사
- Connector inspection

일반 제조산업용 머신 비전

- 차원 정확성 검사
- 어셈블리 검사
- 픽애플레이스 기계의 물체 위치 확인

식품 검사 산업용 머신 비전

- 식품 검사 및 분류

사양

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	• 4186 - Open Easy3DLaserLine for USB dongle • 4236 - Open Easy3DLaserLine for PAR dongle • 4286 - Open Easy3DLaserLine for soft-based licensing
Optional accessories	• 6512 - eVision/Open eVision USB Dongle (empty) • 6513 - eVision/Open eVision Parallel Dongle (empty)



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