ZEBRA
CAPTURE YOUR EDGE

Zebra Aurora Imaging Library

CODE-BASED APPLICATION DEVELOPMENT

Zebra Aurora Imaging Library™ is a machine-vision software development kit (SDK) with a deep collection of tools for image capture, processing, analysis, annotation, display and archiving. Aurora Imaging Library includes tools for every step in the process, from application feasibility to prototyping, through to development and ultimately deployment.

The SDK toolkit was expressly designed to enhance productivity, thereby reducing the time and effort required to bring solutions to market. Operations are carefully optimized for speed to address the severe time constraints encountered in many applications.

Aurora Imaging Library is a cohesive API with extensive image capture, annotation and display functions. Features and capabilities include a portable API, .NET development, JIT compilation and scripting, simplified platform management, multi-processing and multi-tasking programming models, buffers and containers, industrial and robot communication, WebSocket access, and the option to save and load individual images, image sequences and data containers to and from disks.

Aurora Imaging CoPilot

The Aurora Imaging CoPilot interactive environment facilitates and accelerates the evaluation and prototyping of an application, including configuring the settings or context of Aurora Imaging Library vision tools. The same environment can initiate—and therefore shorten—the application development process through the generation of Aurora Imaging Library program code. It offers dedicated workspaces for training one of the supplied deep learning neural networks for Classification.

Once an operation sequence is established, it can be converted into functional program code in any language supported by Aurora Imaging Library. All work carried out in a session is saved as a workspace for future reference and sharing with colleagues.

Why Choose Aurora Imaging Library?

FULLY ENGINEERED SOLUTIONS

Code-level access ensures full customization, maximum flexibility, and greater performance optimization to tackle visions tasks from simple image capture to complex 3D or deep learning applications.

END-TO-END COVERAGE

Integrated utilities guide users through each step, from feasibility, prototyping, development, deployment, and performance monitoring to help shorten ramp-up time and improve application outcomes.

SINGLE, PORTABLE API

The C/C++ API also includes image capture, annotation, and display functions. Easily portable, the API can move between interfaces or OS to best protect your original investment.

INCREASE PRODUCTIVITY AND REDUCE DEVELOPMENT COSTS

Vision Academy online and on-premises training lets users can seek out training on specific topics of interest so they can get the most out of Aurora Imaging Library software.

Development Features

The Aurora Capture Works utility provides a utility for verifying the connection to one or more GenICam-based cameras or 3D sensors and testing acquisition from these, while Aurora Imaging Library-Lite offers a subset of Aurora Imaging Library, featuring programming functions for performing image capture, annotation, display and archiving, along with other features such as fast operators for arithmetic, Bayer interpolation, color space conversion, temporal filtering, basic geometric trans-formations, histogram, logic, LUT mapping and thresholding.

Distributed Aurora Imaging Library Interface

Aurora Imaging Library can remotely access and control image capture, processing, analysis, display and archiving. Distributed Aurora Imaging Library functionality provides the means to scale an application beyond a single computer and make the most of modern-day high-performance computing (HPC) clusters for machine vision applications. The technology can also be used to control and monitor several PCs and smart cameras deployed on a factory floor.

Key Features

Solve applications rather than develop underlying tools

by leveraging a toolkit with a more than 25-year history of reliable performance

Tackle applications with utmost confidence

using field-proven tools for analyzing, classifying, locating, measuring, reading and verifying

Base analysis

on monochrome and color 2D images as well as 3D profiles, depth maps and point clouds

Harness the full power of today's hardware

through optimizations exploiting SIMD, multi-core CPU and multi-CPU technologies

Support platforms ranging from smart cameras to HPCs

via a single consistent and intuitive API

Obtain live data in different ways

with support for analog, Camera Link, CoaXPress, DisplayPort, GenTL, GigE Vision, HDMI, SDI, Linux and USB3 Vision interfaces

Maintain flexibility and choice

by way of support for 64-bit Windows and Linux along with Intel and Arm processor architectures

Leverage available programming know-how

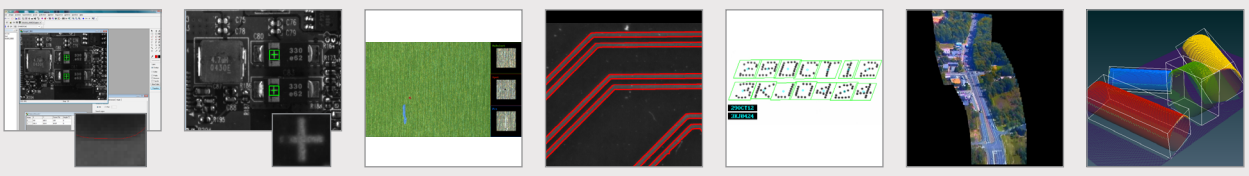
with support for C, C++, C# and CPython languages

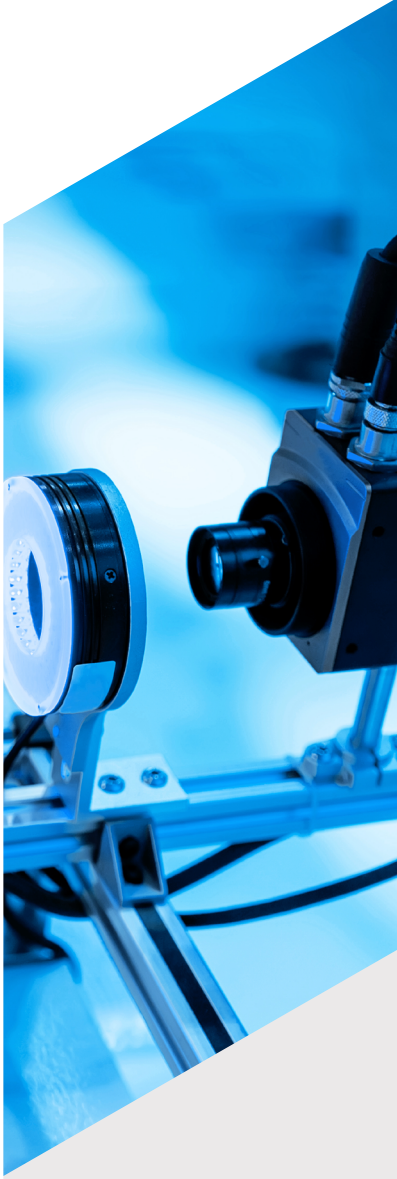
Experiment, prototype and generate program code

using Aurora Imaging CoPilot interactive environment

Capabilities

- Pattern Recognition
- Shape Finding
- Feature Extraction and Analysis
- Classification
- 1D and 2D Measurement
- Color Analysis
- Character Recognition
- 1D and 2D Code Reading and Verification
- Registration
- 2D Calibration
- Image Processing Primitives
- 3D Vision Tools





Supported Environments

For Windows

- 64-bit Windows 10 (Versions 1607 to 22H2) and Windows 11 (Version 21H2 and 23H2)
- Visual Studio 2017, 2019 and 2022 (unmanaged C++ and C# with .NET Framework 4.8 or .NET 6)
- CPython 3.7 and 3.9

For Linux:

- 64-bit Ubuntu 22.04 LTS
- 64-bit Red Hat Enterprise Linux 9.1
- 64-bit SUSE Linux Enterprise 15 SP4
- GNU Compiler Collection (for C/C++) and Python from Linux distribution
- .NET 6 (for C#)

For ARM:

The majority of processing, analysis, annotation, display and archiving functionality in Aurora Imaging Library is also available to run on Arm Cortex-A family processors, specifically those employing the Armv8-A 64-bit architecture. The processing and analysis functions are optimized for speed using the Neon SIMD architecture extension. Aurora Imaging Library for Arm is supported on appropriate 64-bit Linux distributions, like the one from Ubuntu. Image capture can be accomplished using the GenTL, GigE Vision or Video4Linux2 interfaces. Aurora Imaging Library for Arm is available to select users as a separate package upon qualification.

Vision Academy

Available to customers with valid Aurora Imaging Library maintenance subscriptions, as well as Aurora Imaging Library-Lite users and those evaluating the software, users can seek out training on specific topics of interest. Vision Academy aims to help users get the most out of Aurora Imaging Library, increase productivity, reduce development costs and bring applications to market sooner.

Aurora Imaging Library Maintenance Program

Aurora Imaging Library users have access to a Maintenance Program, renewable on a yearly basis. This maintenance program entitles registered users to free software updates and entry-level technical support from Zebra, as well as access to Vision Academy.

Code-based application development. Experience the difference with Aurora Imaging Library. For more information, visit **www.zebra.com/aurora-imaging-library**

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