

# OpenCV Android Documentation

OpenCV

*progress since October 2012, documentation for version 2.4.13.3 can be found at [docs.opencv.org](http://docs.opencv.org). An IPU may also utilise OpenCV hardware acceleration.*  
*Free*

OpenCV (Open Source Computer Vision Library) is a library of programming functions mainly for real-time computer vision. Originally developed by Intel, it was later supported by Willow Garage, then Itseez (which was later acquired by Intel). The library is cross-platform and licensed as free and open-source software under Apache License 2. Starting in 2011, OpenCV features GPU acceleration for real-time operations.

Google Test

*ChromeOS) LLVM compiler Protocol Buffers (Google's data interchange format) OpenCV computer vision library Robot Operating System Gromacs molecular dynamics*

Google Test, often referred to as gtest, is a specialized library utilized to conduct unit testing in the C++ programming language. This library operates under the terms of the BSD 3-clause license. Google Test is based on the xUnit architecture, a systematic methodology for assessing software components.

Google Test can be compiled for a diverse range of computer systems, encompassing those employing POSIX, a set of standard operating system interfaces, as well as the Microsoft Windows platform. This adaptability facilitates the execution of unit tests on both C and C++ codebases, with minimal alterations required in the source code.

Robot Operating System

*"MoveIt Motion Planning Framework". ROS MoveIt!. "MoveIt Documentation: Rolling". "vision\_opencv - ROS Wiki".*

*ROS.org. Open Robotics. Retrieved 29 April*

Robot Operating System (ROS or ros) is an open-source robotics middleware suite. Although ROS is not an operating system (OS) but a set of software frameworks for robot software development, it provides services designed for a heterogeneous computer cluster such as hardware abstraction, low-level device control, implementation of commonly used functionality, message-passing between processes, and package management. Running sets of ROS-based processes are represented in a graph architecture where processing takes place in nodes that may receive, post, and multiplex sensor data, control, state, planning, actuator, and other messages. Despite the importance of reactivity and low latency in robot control, ROS is not a real-time operating system (RTOS). However, it is possible to integrate ROS...

List of OpenCL applications

*HandBrake Final Cut Pro X KNLMeansCL: Denoise plugin for AviSynth Libav  
OpenCV RealFlow Hybrido2 Sony Catalyst Vegas Pro by Magix Software GmbH*

## *vReveal*

The following list contains a list of computer programs that are built to take advantage of the OpenCL or WebCL heterogeneous compute framework.

## MindSpore

*computing architecture for AI developed by Huawei. With CANN backend in OpenCV DNN, giving developers ability to run created AI models on the Ascend, Kirin*

MindSpore is a open-source software framework for deep learning, machine learning and artificial intelligence developed by Huawei.

List of free and open-source software packages

*vision, artificial intelligence and robotics library for the .NET framework  
OpenCV - computer vision library in C++ See List of open-source machine learning*

This is a list of free and open-source software (FOSS) packages, computer software licensed under free software licenses and open-source licenses. Software that fits the Free Software Definition may be more appropriately called free software; the GNU project in particular objects to their works being referred to as open-source. For more information about the philosophical background for open-source software, see free software movement and Open Source Initiative. However, nearly all software meeting the Free Software Definition also meets the Open Source Definition and vice versa. A small fraction of the software that meets either definition is listed here. Some of the open-source applications are also the basis of commercial products, shown in the List of commercial open-source applications...

Python (programming language)

*original on 15 June 2020, retrieved 22 April 2019 &quot;OpenCV: OpenCV-Python Tutorials&quot;. docs.opencv.org. Archived from the original on 23 September 2020*

Python is a high-level, general-purpose programming language. Its design philosophy emphasizes code readability with the use of significant indentation.

Python is dynamically type-checked and garbage-collected. It supports multiple programming paradigms, including structured (particularly procedural), object-oriented and functional programming.

Guido van Rossum began working on Python in the late 1980s as a successor to the ABC programming language. Python 3.0, released in 2008, was a major revision not completely backward-compatible with earlier versions. Recent versions, such as Python 3.12, have added capabilities and keywords for typing (and more; e.g. increasing speed); helping with (optional) static typing. Currently only versions in the 3.x series are supported.

Python consistently ranks...

OpenFrameworks

*built on top of OpenGL. It runs on Microsoft Windows, macOS, Linux, iOS,*

*Android and Emscripten. It is maintained by its founders with contributions by*

openFrameworks is an open-source toolkit designed for creative coding founded by Zachary Lieberman, Theo Watson and Arturo Castro. OpenFrameworks is written in C++ and built on top of OpenGL. It runs on Microsoft Windows, macOS, Linux, iOS, Android and Emscripten. It is maintained by its founders with contributions by other members of the openFrameworks community.

Tegra

*that make e.g. heavy use of the CUDA capable accelerator blocks, and via OpenCV can make use of the NEON vector extensions of the ARM cores. As of April*

Tegra is a system on a chip (SoC) series developed by Nvidia for mobile devices such as smartphones, personal digital assistants, and mobile Internet devices. The Tegra integrates an ARM architecture central processing unit (CPU), graphics processing unit (GPU), northbridge, southbridge, and memory controller onto one package. Early Tegra SoCs are designed as efficient

multimedia processors. The Tegra-line evolved to emphasize performance for gaming and machine learning applications without sacrificing power efficiency, before taking a drastic shift in direction towards platforms that provide vehicular automation with the applied "Nvidia Drive" brand name on reference boards and its semiconductors; and with the "Nvidia Jetson" brand name for boards adequate for AI applications within e.g. robots...

FFmpeg

*(rotate) Transposition (transpose) Others: Lens correction (lenscorrection)  
OpenCV filtering (ocv) Perspective correction (perspective) Temporal editing  
Framerate*

FFmpeg is a free and open-source software project consisting of a suite of libraries and programs for handling video, audio, and other multimedia files and streams. At its core is the command-line ffmpeg tool itself, designed for processing video and audio files. It is widely used for format transcoding, basic editing (trimming and concatenation), video scaling, video post-production

effects, and standards compliance (SMPTE, ITU).

FFmpeg also includes other tools: ffplay, a simple media player, and ffprobe, a command-line tool to display media information. Among included libraries are libavcodec, an audio/video codec library used by many commercial and free software products, libavformat (Lavf), an audio/video container mux and demux library, and libavfilter, a library for enhancing and editing...

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