Anonymizer SDK

Technical sheet

Version 6.x

eyedea
RECOGNITION

ADVANCED COMPUTER VISION SOLUTIONS

Contact:

Address:
    Eyedea Recognition, s.r.o.
    Vyšehradská 320/49
    128 00, Prague 2
    Czech Republic

web: http://www.eyedea.cz

email: info@eyedea.cz

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1 Product Description

Anonymizer SDK is a cross-platform software library designed to provide easy anonymization of RGB images. The software detects and blurs faces and/or car license plates in various scales and orientations, with support for high resolution spherical images. Package includes command line application for batch processing of images. Both one-line and two-lines license plates with EU size or similar are supported (520x110mm, 280x200mm, 320x160mm and similar). Detection of other types of license plates on request.

Example of anonymized image (left) and image with highlited detections for better inspection (right).

1.1 Technical Details

Anonymizer SDK consists of three parts – face detector, license plate detector and image blurring. Face detector or license plate detector parts can each contain multiple detectors for better results for example one detector for one-line plates and one for two-line plates. Areas found by detectors are then seamlessly blurred or they can be highlighted for better visual inspection of results.

The Anonymizer library provides following APIs:

- C native API

Officially supported operating systems and platforms:

- Windows 7, 8, 8.1 and 10
  - 64-bit (Visual Studio 2015)
- Ubuntu 16.04 and higher
  - 64-bit
- Other platforms on request
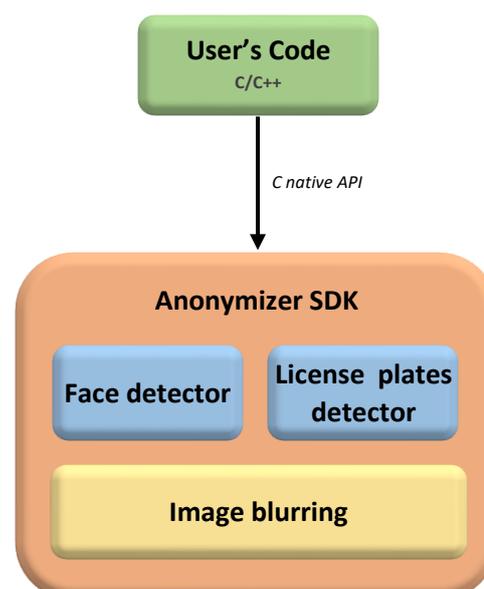
2 Distribution Contents

The following list is an excerpt from the Anonymizer SDK directory structure, highlighting the most important directories and files contained in the software distribution package. A brief description of the items is given.

- [Anonymizer SDK]/ ……………………………………………………………… *Distribution main folder*
  - o AnonymizerSDK ……………………………………………….……… *Anonymizer engine folder*
    - ▪ include ……………………………………………………....…………. *Anonymizer header files folder*
    - ▪ lib ………………………………………………………………………. *Anonymizer libraries folder*
    - ▪ models …………………………………………………….. *Anonymizer detectors models folder*
  - o applications ………………………………………………………………… *Anonymizer applications folder*
    - ▪ anonymizer-cmd ……………………………………….….... *Batch processing application folder*
  - o examples ……………………………………………………………….. *Anonymizer examples folder*
    - ▪ example-files …………………………………………………….... *Files processing example folder*
    - ▪ example-buffers ……………………………………………. *Buffers processing example folder*
  - o hasp ……………………………………………………………………. *License management software folder*
  - o docs …………………………………………………………………………. *SDK documentation folder*
  - o data …………………………………………………………………………..…. *Example data folder*
  - o License.txt …………………………………………………………………….…... *SDK license file*
  - o ReadMe.txt ……………………………………………………………………………… *SDK readme file*
  - o ReleaseNotes.txt ……………………………………………………………………… *SDK release notes file*

3 Hardware Requirements

3.1 Minimal Requirements

Processor: 1.0 GHz, single core, x86 platform, embedded (i.e. Intel Atom)

RAM: 2 GB (depends on size of processed images)

Hard disk: 1 GB free space

3.2 Recommended Requirements

Processor: 2.0 GHz, dual core, x86 platform (i.e. Intel i5)

RAM: 4 GB (depends on size of processed images)

Hard disk: 2 GB free space

3.3 Supported Operating Systems

3.3.1 Windows

- Microsoft Windows 7/8/8.1/10
  - x64 platform

3.3.2 Linux

- Ubuntu 16.04 and higher
  - x86_64 platform

4 Performance

This section shows performance of Anonymizer SDK. Processing speed for different hardware is shown to illustrate hardware requirements.

4.1 Speed

Approximate processing times of anonymization with default parameters for different CPUs and resolutions are shown in tables below. CPU speed is main factor affecting processing times, other factors can be processor architecture, size of CPU cache and speed and latency of RAM. Also Anonymizer configuration can greatly affect processing speed.

For optimal speed, system should have enough RAM to avoid swapping. For 1 megapixel images about 150 MB of RAM is needed, for 10 MPx, about 600 MB is needed and for 50 MPx about 2.5 GB of RAM is needed.

On systems with multicore CPUs performance can be increased by running two or more instances of Anonymizer in parallel but this setup will require enough memory for each running instance of Anonymizer.

Processing time for Intel Core i7-4771 (3.50GHz, 4 cores)			
resolution	1 MPx	10MPx	50 MPx
faces & LPs	0.5 s	3 s	15 s
faces only	0.25 s	1.3 s	6 s
LPs only	0.35 s	2 s	10 s

Processing time for Intel Core i5-4570T (2.90GHz, 2 cores)			
resolution	1MPx	10MPx	50MPx
faces & lps	0.6 s	6 s	28 s
faces only	0.5 s	4 s	17 s
lps only	0.3 s	1.2 s	12 s