

RECOGNITION

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Krasbit Recognition Service

Intro

Krasbit Recognition Service is a script for Photoshop that can communicate with Google Cloud Vision API through Krasbit API as a service on prepaid basis. That machine learning image analysis service will let you:

- search and display exact copies or visually similar images
 - track unauthorized use of your image on 3rd party sites
 - get additional inspiration or avoid going into similar style created already by the others
- automatically set keywords / labels for your artwork
- perform text recognition / OCR
- place editable text back into project (restore text that was converted to curve or bitmap)

Features

1. Suggesting and store keywords for your image based on automatic classification
2. List web links to copies of your images over the web as:
 - a. Fully matched images
 - b. Partially matched images
 - c. Websites where image was matched
3. List web links to images similar to yours. Similar images may be:
 - a. downloaded and opened in Photoshop as:
 - i. floating windows
 - ii. tiles
 - iii. tabs
 - b. opened in your default browser
4. OCR / Detection of textual content that is already rasterized or converted to curves inside your project and recreate it automatically so it will be editable.
5. Save summarized text report with all the detected descriptions, web links to copies and similar images and OCR results (words detected).

Requirements

1. Adobe Photoshop. Works with Creative Suite and Creative Cloud editions.
2. **Prepaid access code** to API service.

Comparison / Cost of Use

	Krasbit Recognition Service - Prepaid Code	Krasbit Recognition Service - Subscription
Licensing model	Perpetual Prepaid code is generated and sent to user's email after manual purchase. However Prepaid code is feature request limited and must be used within one year	Subscription / monthly Prepaid code is generated and sent to user's email every month automatically. Prepaid code is feature request limited and must be used within one month
Price	Visit Krasbit at Adobe Exchange to get recent price list	
Cost of use	Pay in advance for fixed amount of API units on prepaid basis. No additional costs possible. When user exceeds the limits assigned to his service plan - new Prepaid Code is required to continue use of service	

User's data flow	Connection from Adobe Photoshop to Krasbit API via Prepaid Code as access verification and usage tracking. Krasbit redirects requests to Cloud Vision API	
Trial availability	Test trial Prepaid Code available with lower quantities than given in paid version: Web detection: 50, Text detection: 25, Dense text detection / OCR: 25 Trial prepaid code is valid one month	Not available
Limitations	Each Prepaid Code bought on demand will let user to call features with following limits: Web detection: 500, Text detection: 50, Dense text detection / OCR: 50 Expiration date until Prepaid Code must be used is calculated from day of generation + 366 days	Prepaid Code generated every month as a result of monthly subscription will let user to call features with following limits: Web detection: 500, Text detection: 50, Dense text detection / OCR: 50 Expiration date until Prepaid Code must be used is calculated from day of generation + 31 days
Using on multiple computers	Prepaid code may be used or shared to multiple computers / users. Each Krasbit Recognition Service feature request with use of given Prepaid Code will be counted and deducted from your initially available quantities.	

Setup

Install script manually

For maximum compatibility with variety of Photoshop versions, *Recognition* is published as ExtendScript .jsx file and all the interface is based on ScriptUI.

1. Extract zip archive
2. Close Adobe Photoshop
3. Copy both files:
 - a. ***krasbit_recognition_service_setup_1.2.0.a.jsx***
 - b. ***krasbit_recognition_service_photoshop_1.2.0.a.jsx***into Photoshop default folder for scripts. On Windows, this is in most cases:
C:\Program Files\Adobe\Adobe Photoshop {VERSION NUMBER}\Presets\Scripts
4. Start Adobe Photoshop

Usage

New menu items will be visible at:

- File / Automate / **Krasbit: Recognition Service - Setup...**
- File / Automate / **Krasbit: Recognition Service - Run...**

***Photoshop must be restarted** in order to see new items available

Krasbit: Recognition Service - Setup...

Setup Window

You have to configure script before first use or at any time you wish to adjust the settings

Run Recognition configuration script via menu item:

Menu: File -> Automate-> Krasbit: Recognition Service - Setup...

To request a free test trial prepaid code click [Use trial code](#) button. This will generate and download a code for you and setup it to use with app.

The screenshot shows the 'Krasbit Recognition Service 1.2.0.a - Setup' dialog box. It is divided into several sections:

- Access to API service:** Contains two buttons: 'Use trial code' and 'Buy'. Below them is a text input field for 'Prepaid access code:' and a 'Verify' button.
- Service usage remaining:** Displays 'Your prepaid code will expire at: ...'. Below this, it states 'The remaining quantities of features calls are as follows:'. It lists three categories: 'Web detection (similar images or copies, web descriptions as keywords): 0', 'Text detection: 0', and 'Document Text detection / OCR: 0'.
- Export temp file settings:** Features two sliders. The first is labeled 'Maximum size: 960 [pixels]' and the second is labeled 'JPEG quality: 75 [%]'.
- Download and Reporting folder:** Includes a 'Browse' button and a text field showing the folder path '~\Desktop\Krasbit - Recognition'.
- Select recognition features:** Contains three checkboxes: 'Web detection (similar images or copies, web descriptions as keywords)' (checked), 'Text Detection' (checked), and 'Document text detection / dense text OCR' (unchecked).

At the bottom of the dialog are 'Ok' and 'Cancel' buttons. The footer of the dialog reads '©2017-2018 KRASBIT Jarosław Kraska'.

Access to API service

Use trial code

You can test Krasbit Recognition using a prepaid code generated uniquely for you. Click to request code and set it as active prepaid code to access to API service.

Buy

Will open [Krasbit page at Adobe Exchange](#) where you'll be able to buy a single prepaid code and/or order a monthly subscription.

Prepaid access code

You will get a prepaid code onto your email address as a result of successful payment. Copy / Paste here this code. It will grants an access to service.

Verify

Click this button to finally connect to Krasbit API service and verify if given prepaid access code is valid and get a list of features and quantities / limit that are assigned to the code. Each time you use [Krasbit: Recognition Service - Run...](#) service, the number of remaining calls will be decremented for the chosen recognition features. Thus, you will see update of remaining quantities automatically under [Service usage remaining](#) section of UI.

Access to API service

Prepaid access code:

Service usage remaining:

Your prepaid code will expire at: 2019-03-18 09:49:34

The remaining quantities of features calls are as follows:

Web detection (similar images or copies, web descriptions as keywords): 50

Text detection: 25

Document Text detection / OCR: 25

Update

This option is available once you have verified your key and may be useful in case you are using your prepaid code on multiple computers, or you have shared it to multiple users. In that scenario each device maintains own local counter for usage of features, but in order to track a total / global usage of features for given prepaid code you need to update the state using this option. It will connect to API service and synchronise local counter state with the total remaining counter related to your prepaid code.

Service usage remaining

This area shows details about expiration date for your code and remaining quantities of service call per each feature separately: [Web detection](#), [Text Detection](#), [Document Text Detection](#).

Export temp file settings

That settings controls the properties of output temporary image that is produced by script before your working project is sent to recognition service for analysis.

Maximum size

This setting controls maximum size of larger edge of exported image. If working image is larger than this value it will be temporarily downscaled.

JPEG Quality

This setting controls the quality of image exported to recognition service.

Both options will help you to significantly reduce the time of request preparation and execution. On other hand, lowering the values can reduce detection results. It's up to you to set a balanced values that works best to you.

Download and Reporting Folder

This panel controls target folder where script will be downloading similar images from web, in order to open in your application next to your original image. This folder also may store automatically generated textual reports from results of your search.

Browse

Click to open system browse to folder dialog and specify desired location.

Folder

Shows the current settings of target download folder.

Select recognition features

Web detection

This option will perform:

- searching for exact copies of your project or images similar to yours over the web.
- analyze the content of your project and suggest the keywords list that might recorded with your image and used later in search by stored metadata.
- display [Web Detection Window](#)

Text Detection

This will perform a simple text detection on your image. That option is designed for detecting individual words that may be hand written and rotated. May not be accurate for large block of texts or tiny text but on other hand is cheaper and less computing expensive.

Document text detection / dense text OCR

This will perform a dense text detection on your image. That option is more accurate for large block of texts and tiny text but is more expensive in terms of computing and [pricing](#). This option assumes that it will detect machine written text that is inline. Thus if skewed or slightly rotated text in project is intentional, then this may be straightened when restored editable text will be placed.

You can have selected *Text Detection* **or** *Document text detection / dense text OCR* **but not both at same time**. If you are not sure which one is good enough for your case, try to start from [Text Detection](#). If results are not accurate, switch to advanced and more expensive option - [Document text detection / dense text OCR](#).

OK

Click “**OK**” button to save your configuration. Your settings will be used later when you run main Recognition script: **Menu: File -> Automate-> Recognition - Run...**

Cancel

Will close the window with no more actions.

Example image

This exemplary image is used to present the results of the Krasbit Recognition script running at Adobe Photoshop application.

HELLO WORLD

Rotated text



What is Lorem Ipsum?

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.

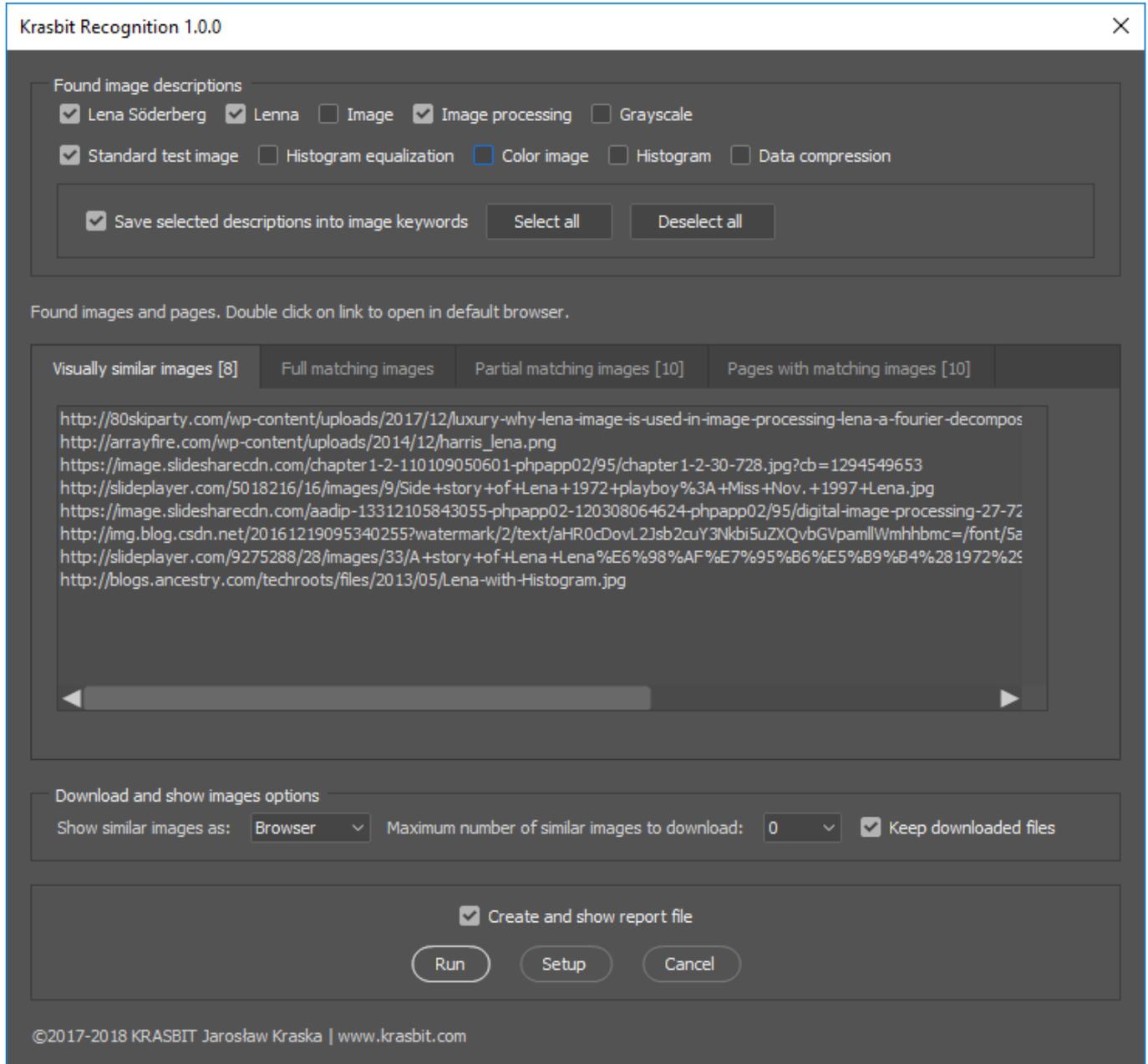
Krasbit: Recognition Service - Run...

This command should be available at menu item:

File / Automate / Krasbit: Recognition Service - Run...

If you have not configured Recognition yet - you will see a [Setup Window](#) where you need to configure crucial, initial settings. Otherwise [Web Detection Window](#) and/or [Text Detection Window](#) will be shown depends of your configuration and selected recognition features.

Web Detection Window



Found image descriptions

This panel will show you a suggested descriptions for your image as a checkboxes you can select. Every image may generate a different set of checkboxes due to how machine learning image analysis service from Google is understanding your image. Selected checkboxes from this panel may be transferred into Image

keywords. This may help you later to search or filter images by any software capable to work with keywords like Bridge or Lightroom.

Save selected descriptions into image keywords

Use this checkbox to enable / disable transferring selected descriptions into active document keywords.

Select all

Will quickly select all suggested descriptions for you.

Deselect all

Will quickly deselect all suggested descriptions for you.

Found images and pages

This panel displays four tabs with a search results and web links to exact copies or visually similar images and the quantities it found. **You may double click any list item in order to open the link in default browser.**

Visually similar images

Contains the list of images that machine learning image analysis service of Google consider as images similar to yours.

Full matching images

Contains the list of images that are considered as a copy of your image.

Partial matching images

Contains the list of images that are considered as a partial copy of your image.

Pages with matching images

Contains the list of websites where all the matching images were found.

Download and show images options

In case of [Visually similar images](#), you may automatically download up to 10 images from list and place them next to your working active document in order to compare or get additional inspiration and thoughts. You can control the way how script will show downloaded images. With following options:

Show similar images as

- Window - will open each image as new float window,
- Tile - will open images as tile,
- Tabs - will open images as tabs,
- Browser - will open images in default browser

Maximum number of similar images to download

Limit the number of automatic download and open in Photoshop to given number from 0 - 10. If you will specify 0, then script will skip downloading and opening of similar images, and just create a textual report file or transfer descriptions to keywords for active document.

Keep downloaded files

Whatever to keep or delete similar image files that were downloaded after they were loaded into Photoshop interface.

Create and show report file

Select this checkbox to produce and open a textual version of summarized report with descriptions and links that were presented in dialog.

Run

Will run desired and selected actions related to web detection over your project.

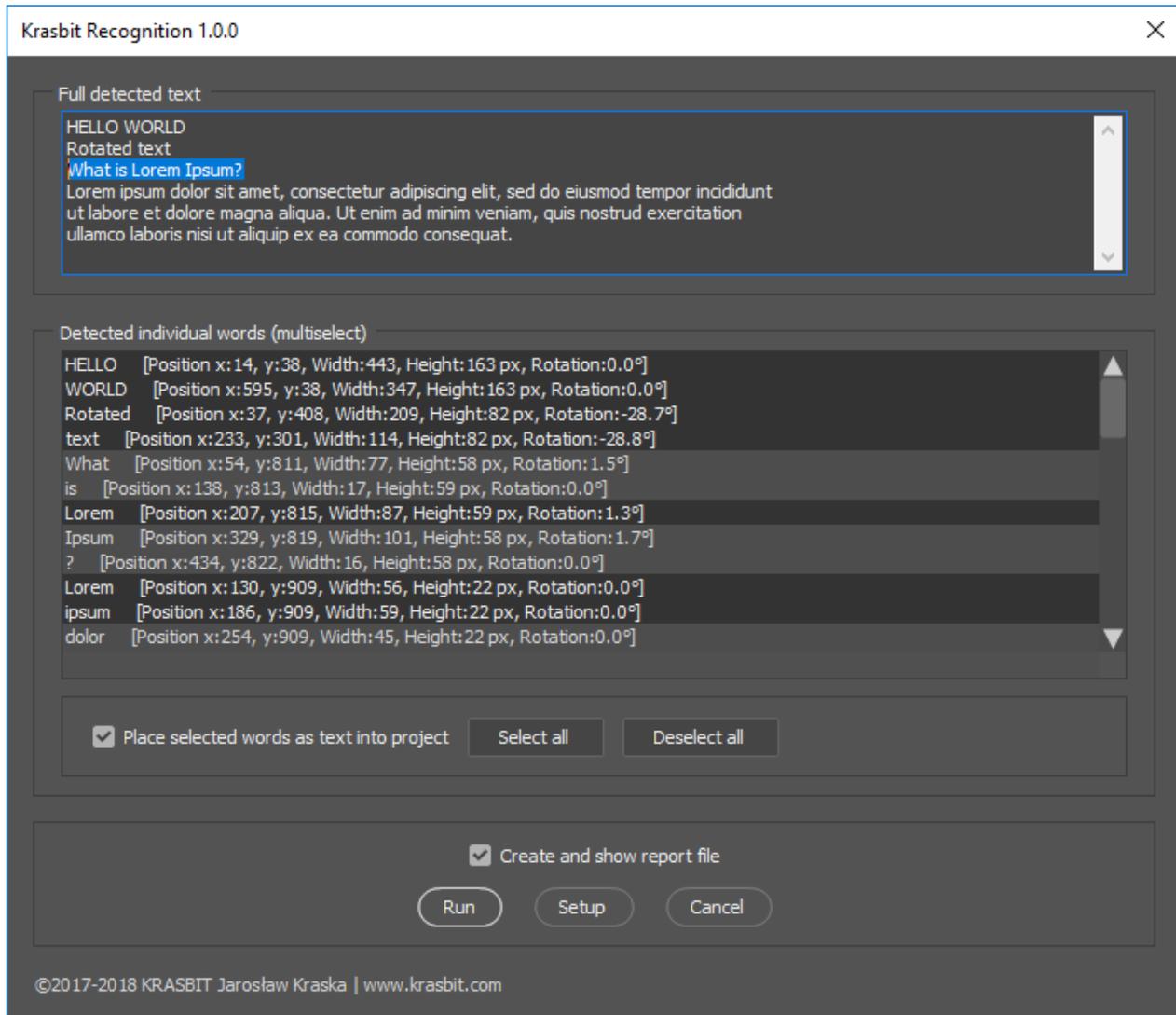
Setup

Will show [Setup Window](#).

Cancel

Will close the window with no more actions related to web detection.

Text Detection Window



Full detected text

This text area will show you all words detected in your image as single block of selectable text. You can copy/paste desired content and use on your own.

Detected individual words (multiselect)

This list shows each detected word individually. You can multi-select desired range of words to being placed automatically into your project at given location and rotation angle.

Place selected words as text into project

If you will select this checkbox, then selected words from list will be placed into your project at detected position, size and rotation. Your application foreground fill color will be used as color for imported text.

Select all / Deselect all

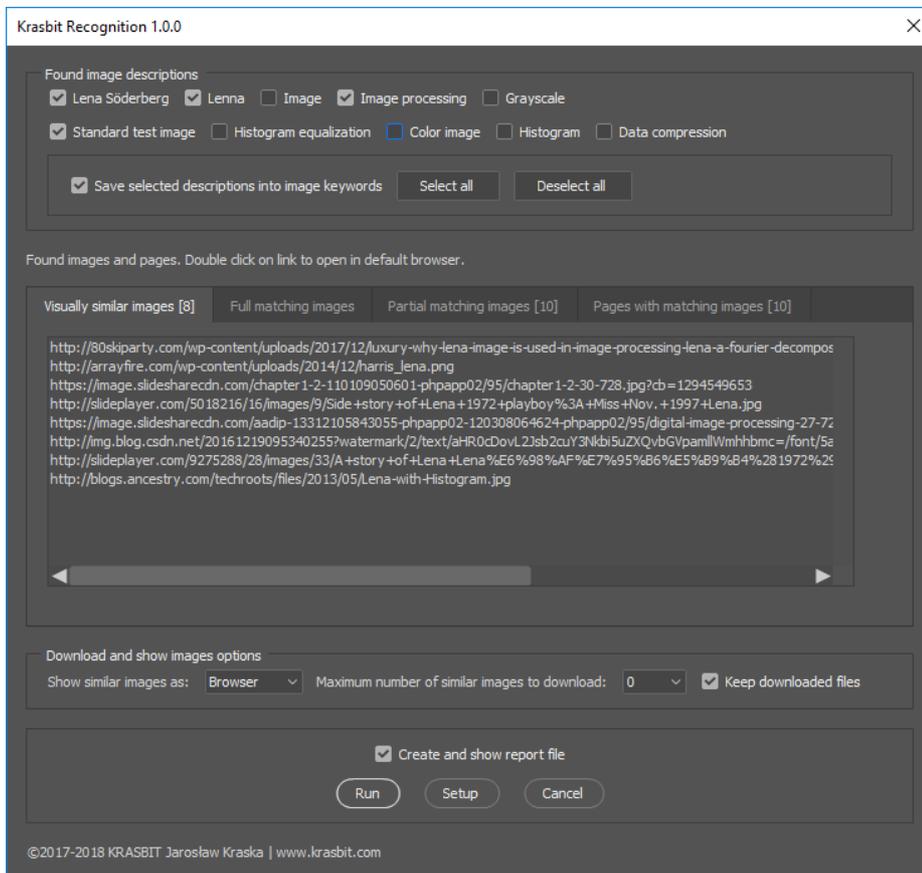
Will quickly select or deselect all detected words for you.

Create and show report file

Selecting this will produce and open a summarized text report with detected words.

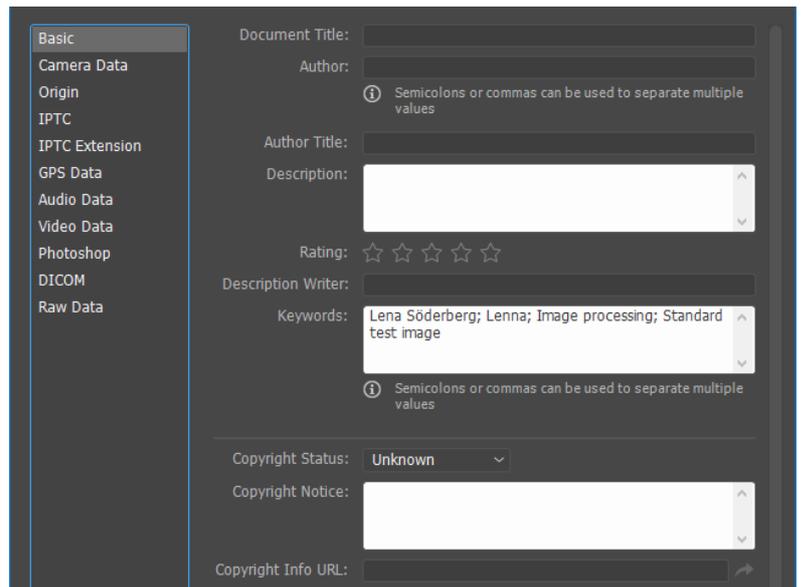
Example results

Web detection

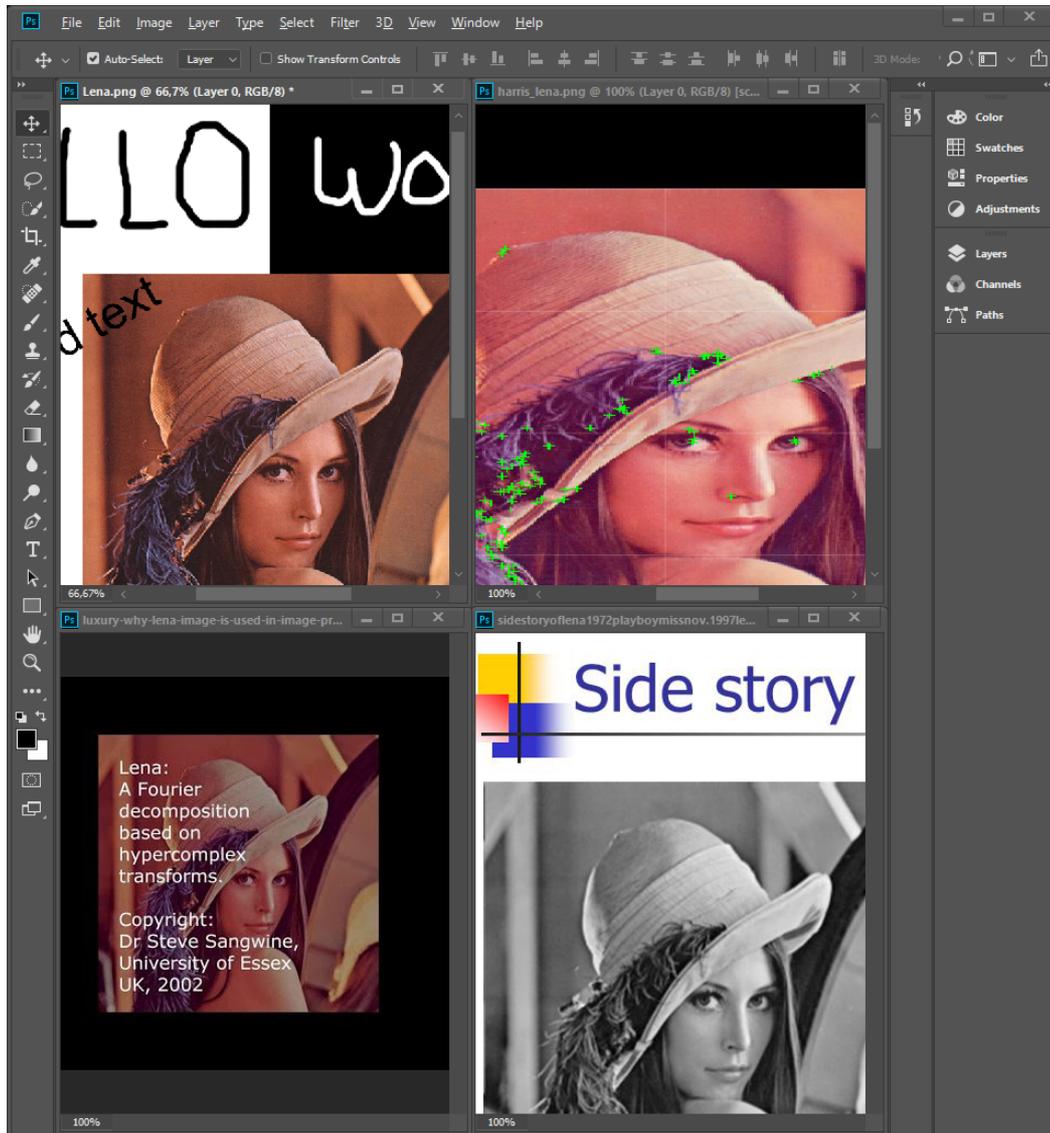


The female model was perfectly recognised. No surprise that there is a lot of other images and sites actively using that picture as is or in altered form. It was and is popular sample used by computer graphics engineers since decades.

Four image descriptions were selected to transfer as keywords into image metadata. Here is the Adobe Photoshop view representing transferred keywords:



When [Download and show images options](#) is selected as one of **Window**, **Tile** or **Tabs** then script will download and import selected number of images from matched [Visually similar images](#) as in example screen:



If you will select **Browser** option instead, then result's links will be opened in default system browser.

If you do not wish to download and open any links, select **0** value from [at Maximum number of similar images to download](#) listbox.

If [Create and show report file](#) is selected then script will produce a text file like this. So you can store and open the links later using your desired browser. This file also includes all detected suggested image descriptions.

Web detection report.txt

```
Krasbit Recognition - Web detection report. Version 1.0.0 | © 2017 KRASBIT Jarosław Kraska | https://www.krasbit.com
```

```
Found image descriptions:
```

```
Lena Söderberg;Lenna;Image;Image processing;Grayscale;Standard test image;Histogram equalization;Color image;Histogram;Data compression
```

```
Full matching images:
```

```
http://www.mostlymaths.net/2009/12/image-processing-history-lena.html
http://timothykurek.com/10-lena-image-processing/image-processing-history-lena-on-lena-image-processing/
https://github.com/jvtrigueros/imageProcessing/wiki
http://bugra.github.io/work/notes/2014-05-16/entropy-perplexity-image-text/
https://sourcedexter.com/manipulating-image-pixels-with-python-scikit-image-color-schemes/
https://digitalpadm.com/gray-level-transformation-image-enhancement-techniques-matlab-code/
http://torch.ch/blog/2015/09/21/rmva.html
https://nn.readthedocs.io/en/rtcd/convolution/index.html
```

<https://software.intel.com/en-us/forums/intel-integrated-performance-primitives/topic/351974>
<https://digitalpadm.com/image-contrast-enhancement-cumulative-histogram-equalization/>

Partial matching images:

https://tipsntics.files.wordpress.com/2014/01/lenaoriginal_2.png
<https://i.stack.imgur.com/iuCKR.jpg>
<https://i.ytimg.com/vi/jUj8dDqFfzo/maxresdefault.jpg>
<https://zestedesavoir.com/media/galleries/3620/3a984c10-1498-4469-aa07-6864c676d4f6.jpg>
<https://zestedesavoir.com/media/galleries/3620/434d8a21-164e-4b14-aeae-484537c7a225.jpg>
<https://cdn-ak.f.st-hatena.com/images/fotolife/g/ginnyu-tei/20170705/20170705220240.jpg>
<https://zestedesavoir.com/media/galleries/3620/2a809354-6890-4cae-bef1-alfde8a5494f.png>
<https://zestedesavoir.com/media/galleries/3620/45381e22-6d8b-4700-a18e-d1c1b350bd04.png>
<https://images2015.cnblogs.com/blog/1000410/201608/1000410-20160806231038840-416684288.jpg>
http://mblogthumb2.phinf.naver.net/20140901_25/hamjii_1409572127000b02TR_PNG/Selection_015.png?type=w2

Pages with matching images:

<http://www.mostlymaths.net/2009/12/image-processing-history-lena.html>
<http://timothykurek.com/10-lena-image-processing/image-processing-history-lena-on-lena-image-processing/>
<https://github.com/jvtrigueros/imageProcessing/wiki>
<http://bugra.github.io/work/notes/2014-05-16/entropy-perplexity-image-text/>
<https://sourcedexter.com/manipulating-image-pixels-with-python-scikit-image-color-schemes/>
<https://digitalpadm.com/gray-level-transformation-image-enhancement-techniques-matlab-code/>
<http://torch.ch/blog/2015/09/21/rmva.html>
<https://nn.readthedocs.io/en/rtcd/convolution/index.html>
<https://software.intel.com/en-us/forums/intel-integrated-performance-primitives/topic/351974>
<https://digitalpadm.com/image-contrast-enhancement-cumulative-histogram-equalization/>

Visually similar images:

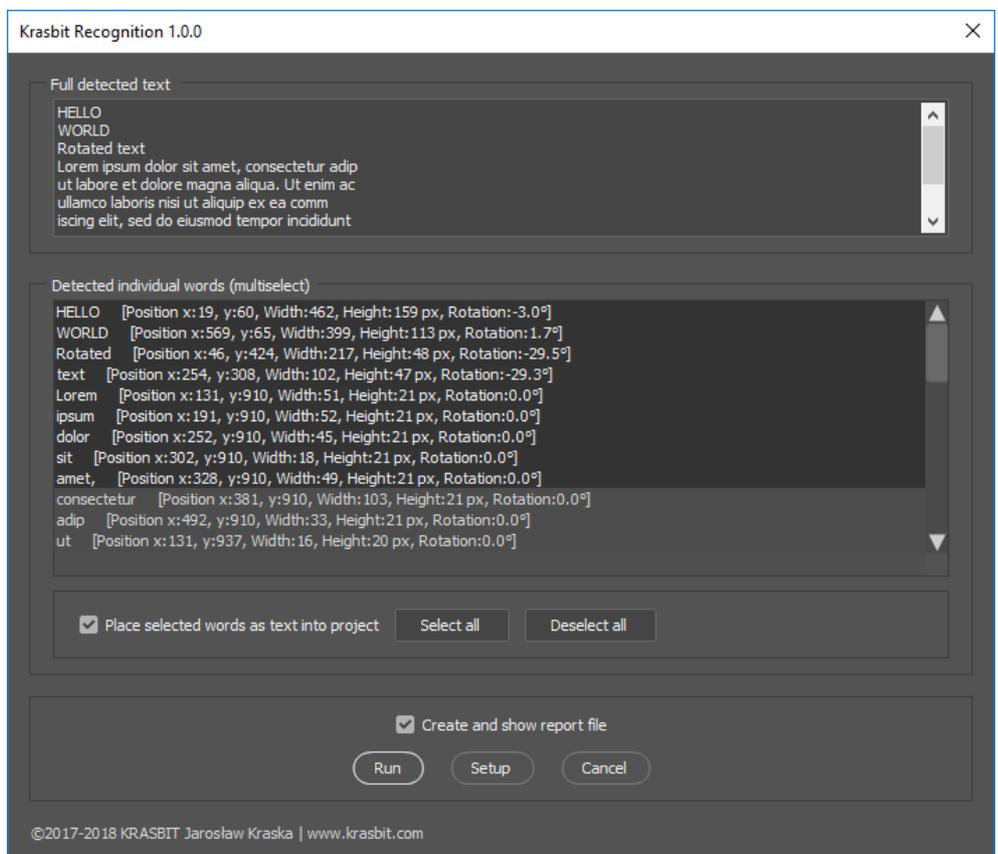
<http://80skiparty.com/wp-content/uploads/2017/12/luxury-why-lena-image-is-used-in-image-processing-lena-a-fourier-decomposition-based-on-hypercomplex-why-lena-image-is-used-in-image-processing.jpg>
http://arrayfire.com/wp-content/uploads/2014/12/harris_lena.png
<https://image.slidesharecdn.com/chapter1-2-110109050601-phpapp02/95/chapter1-2-30-728.jpg?cb=1294549653>
<http://slideplayer.com/5018216/16/images/9/Side+story+of+Lena+1972+playboy%3A+Miss+Nov.+1997+Lena.jpg>
<https://image.slidesharecdn.com/aadip-13312105843055-phpapp02-120308064624-phpapp02/95/digital-image-processing-27-728.jpg?cb=1331192982>
<http://img.blog.csdn.net/20161219095340255?watermark/2/text/aHR0cDovL2Jsb2cuY3Nkbi5uZXXQvbGVpaml1Wmhmbmc=/font/5a6L5L2T/fo ntsize/400/fill/IOJQkFCMA==/dissolve/70/gravity/Center>
<http://slideplayer.com/9275288/28/images/33/A+story+of+Lena+Lena%E6%98%AF%E7%95%B6%E5%B9%B4%281972%29%E7%9A%84%E5%B0%81%E 9%9D%A2%E5%A5%B3%E9%83%E.jpg>
<http://blogs.ancestry.com/techroots/files/2013/05/Lena-with-Histogram.jpg>

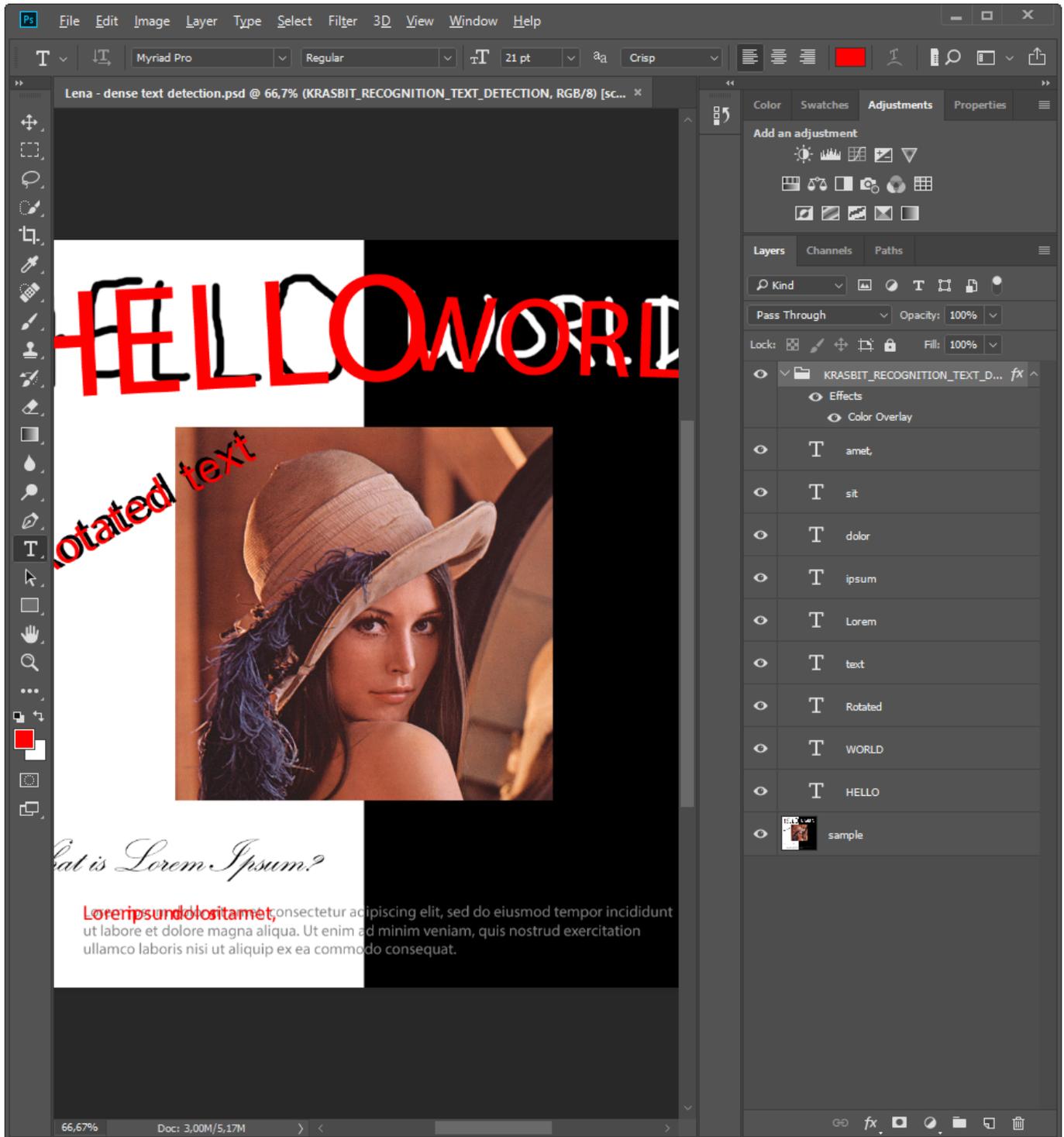
Text detection

When [Text Detection](#)

recognition feature is selected, script was able to detect almost all words in project and position / rotate them closely. However that setting missed “*What is Lorem Ipsum?*” written with artistic font imitating pen handwriting.

Having this window open, you may decide to copy/paste desired text manually from [Full detected text](#) area or select multiple items from [Detected individual words](#) ([multiselect](#)) list and request script to [Place selected words as text into project](#) as in example screenshot





Finally, you can [Create and show report file](#) with text detection results like this:

Text detection report.txt

```
Krasbit Recognition - Text detection report. Version 1.0.0 | © 2017 KRASBIT Jarosław Kraska | https://www.krasbit.com
```

```
HELLO WORLD
```

```
Rotated text
```

```
What is Lorem Ipsum?
```

```
Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt  
ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation  
ullamco laboris nisi ut aliquip ex ea commodo consequat.
```


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