CineSharp Help (Version 1.0 - June 2009)

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CineSharp allows to sharpen a single JPG image or a series of JPG images.
If a series of images have to be sharpened, they must be all stored in the same folder.

The images are sharpened using a 5x5 element convolution matrix.

Convolution matrices

CineSharp provides 6 different convolution matrices. The elements of the matrices are stored in a text file named **ConvolutionMatrices.txt**. The file is located in directory **../CineToVid/CineSharp/**, the installation directory located in the Windows system standard directory for application programs (i.e. special folder "ProgramFiles"). The convolution matrices can be edited with a standard text editor like Notepad. But you should be careful when editing them. It is recommended to let the first 3 matrices unchanged and just modify the last 3 matrices according to your needs. Do not change the matrix names. The definition of the matrices is as follows:

Provided convolution matrix definitions

Name	Definition
Sharp low:	0;0;-1;0;0; 0;-1;-1;-1;0; -1;-1;28;-1;-1; 0;-1;-1;-1;0; 0;0;-1;0;0; 16; 0;0;0;
Sharp medium:	0;0;-1;0;0; 0;-1;-1;-1;0; -1;-1;25;-1;-1; 0;-1;-1;-1;0; 0;0;-1;0;0; 13; 0;0;0;
Sharp high:	0;0;-1;0;0; 0;-1;-1;-1;0; -1;-1;22;-1;-1; 0;-1;-1;-1;0; 0;0;-1;0;0; 8; 0;0;0;
Sharp custom - low:	0;0;-1;0;0; 0;-1;-1;-1;0; -1;-1;28;-1;-1; 0;-1;-1;-1;0; 0;0;-1;0;0; 14; -15;-15;-15;
Sharp custom - medium:	0;0;-1;0;0; 0;-1;-1;-1;0; -1;-1;25;-1;-1; 0;-1;-1;-1;0; 0;0;-1;0;0; 11; -7;-7;-7;
Sharp custom - high:	0;0;-1;0;0; 0;-1;-1;-1;0; -1;-1;22;-1;-1; 0;-1;-1;-1;0; 0;0;-1;0;0; 8; -5;-5;-5;

Take care that there is a space between the colon right after the name and the first matrix element. The seperation characters are semicolons. A semicolon follows even the last element in a line.
A line comprises **25 matric elements**, followed by the **division factor** and **3 color correction values**. All 25 matrix element values and the division factor can be provided as decimal values with a decimal point or decimal comma {e.g. **10.5** or **10,5**}. Which character must be used as decimal seperator is dependent on you cultural settings. For European countries normally a decimal comma, for Englisch speaking countries normally a decimal point. If the wrong decimal seperator is used, this normally leads to very bright images.
The 3 color correction values must be provided as integers. Decimal fractions are ignored.
The division factor has to be set so that the value resulting from the matrix calculation devided by the division factor yields a valid color close to the original color.

The convolution matrix to be used for sharpening is **selected via the dropdown selection listbox** located under the field showing the image library name.

Example using a 3x3 convolution matrix - demonstrated at a single color component e.g. red

matrix def.		
-1	-1	-1
-1	10	-1
-1	-1	-1

col red vals		
150	155	160
152	154	156
149	150	152

Calculation of the sum:
(-1*150)+(-1*155)+(-1*160)+(-1*152)+(10*154)+(-1*156)+(-1*149)+(-1*150)+(-1*152)= 308
Devide by factor:
308 / 2 = 154   *(factor approximately the sum of all convolution matix element values)*
Apply color correction: 154 + 0 = 154 (0 [zero] as correction for red used)
The color correction can be used to make the color a little bit darker (negative correction value) or a little bit brighter (positive value). If the resulting color value is greater 255 it is set to 255, if the resulting color value is less than 0 it is set to 0.

Saving Convolution matrices

The element values of a presented convolution matrix can be changed if required. The changed values can be saved to the original matrix line or a new line with a different name can be stored in the convolution matrices definition file.
If the input field below the **"Save as"** button is empty, the new values override the old (existing) values. If the field contains a new name, a new line in the convolution matrices definition file is generated to be used in future sessions.

Menu Functions

The File Menu

Menu Item Name - Function

Open Directory [Ctl+D]

Invocation of the **System Directory Selection Dialog** to specify the directory in which the JPG images to be sharpened are stored. The name of the selected directory is stored in the field labeled **Image Library**.
After the directory is successfully selected, the first image and the last image in the directory is presented in the thumbnail picture boxes and the filenames are shown in the associated text boxes in the upper right section of the dialog.
The start image and the end image can be changed using the sliders located under the thumbnails. The end image always must follow the start image! A false positioning is not possible. A message signals the attempt to do that.

Test [Ctl+T]

Start of a test sharpening process to test the result achieved using the selected convolution matrix.
The test is applied to the start image. The original start image is (partially) presented in the lower left picture box. The resulting image is (partially) presented in the lower right picture box. When the cross cursor is above the lower left picture box, the image can be dragged to select a reasonable picture section to judge the sharpening result. The result image in the lower right picture box follows the left picture. The sharpening progress is shown as a percentage in the message field.
The sharpening result can be stored in the result libray [*see RUN Function*] by clicking the **"Save Test"** button.
The sharpened image can be viewed in full size by clicking the **"Show Full"** button.

Run [Ctl+R]

Start the sharpening loop. The images are sharpened beginning with the start image and ending with the end image. The sharpened images are stored in a target library with the same name as the image library **but expanded** with an **"s"** at the end. [Example: selected image library name = *C:\Images\Test* , target libray = *C:\Images\Tests*]. If the directory does not exist, it is created.
The file names are <u>not changed</u>.

Exit [Ctl+X]

Quit the application.

The Options Menu

Not yet implemented

The Help Menu

Menu Item Name - Function

About

Presentation of the **About Dialog**

HTML Help

Presentation of the HTML File **CineSharpHelp.htm**, this help information.

Check for Update

Presentation of the **CineSharp Version Test** dialog. The dialog shows the installed version and the version actually available in the world wide web as strings with the version number and the release date.
If the installed version is older that the actually available version, please check the website **http://wkurz.com** in order to download and install the newer version.

Button Functions

Button Name - Button Function

Help
Invokes the help dialog.
CancelAsync
Terminates an active batch sharpening loop. This button is only active when a sharpening loop has been started via the **Run** menu item.
Show Full
Presents the sharpened image resulting from a test run triggered via the **Test** menu item.
Save Test
Saves the sharpened image resulting from a test run triggered via the **Test** menu item in the target library *[see RUN function]*.
Reset
Resets all window fields to their initial values.
Exit
Terminates the application.

Last changed : June 16, 2009