



NVeiler Video Filter v1.0 for VirtualDub

User guide

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1. Introduction

1.1. About

NVeiler Video Filter 1.0 for VirtualDub is a tool-like filter providing easy way of hiding human faces or manually selected objects in videos.

FEATURES:

- **Face detection.** *NVeiler Video Filter* automatically detects human faces looking directly at the camera.
- **Tracking.** Automatically tracks detected faces or manually selected objects in subsequent frames.
- **Adjustable face detection parameters.** Face confidence threshold, maximum face roll angle, minimal distance between eyes can be adjusted according to video characteristics.
- **Edit objects to be hidden.** Objects of detected faces can be deleted, modified or added for each video frame separately.

1.2. System requirements

To use *NVeiler Video Filter* your system should meet the following minimal requirements:

Resource	Minimum requirements
Processor	2.66 GHz (or better)
Operating system	Windows XP/Vista/7
VirtualDub	32-bit v1.9.11 or higher (stable version)

2. Installation

Before installation make sure that your computer meets [minimum requirements](#) for *NVeiler Video Filter*.

2.1. Installation steps

NVeiler Video Filter is installed by copying *NVeilerFilter.vdf* to “plugins” directory within VirtualDub installation directory.

1. Extract the contents of this archive to *Program Files* directory (e.g. C:\Program Files\Neurotechnology\NVeilerFilter).
2. Within extracted directory locate *Bin\Win32_x86\NVeilerFilter.vdf* file. Copy *NVeilerFilter.vdf* file to VirtualDub\plugins directory (e.g. C:\Program Files\VirtualDub\plugins).
3. See License activation.

3. License activation

To activate *NVeiler Video Filter* follow activation instructions from *Documentation\Activation.pdf*.

4. Using filter

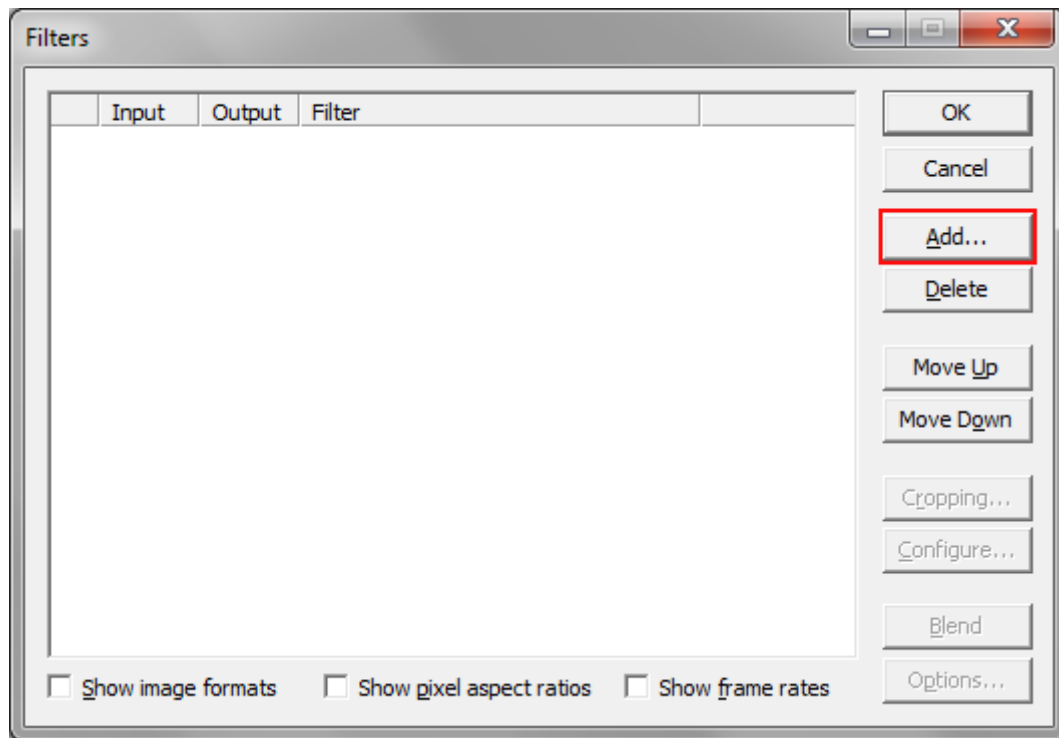
4.1. Common usage scenario

Before using filter make sure that license was activated (see License activation). Open video file to test if VirtualDub is capable of playing it. Go to VirtualDub *File* menu and choose *Open video file*. Open video for processing. If video was opened successfully locate video frame containing face to be hidden. Enable *NVeiler Video Filter* for algorithm to be able to detect faces automatically (see Enabling filter). If face detection algorithm managed to detect face in given video frame it will be distorted by means of pixelization. If face was not detected automatically face detection threshold can be lowered (see Adjusting face detection). If some faces were not located automatically they can be selected manually (see Manual object selection).

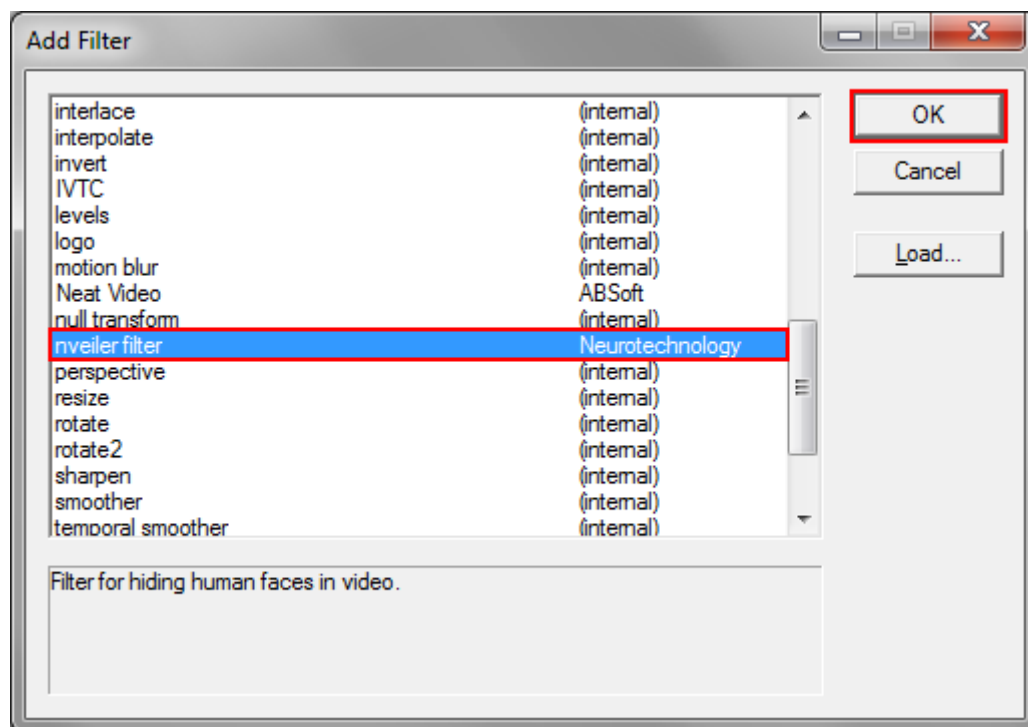
4.2. Enabling filter

Open VirtualDub application. From menu choose *Video > Filters*.

1. Press Add button in Filters window.



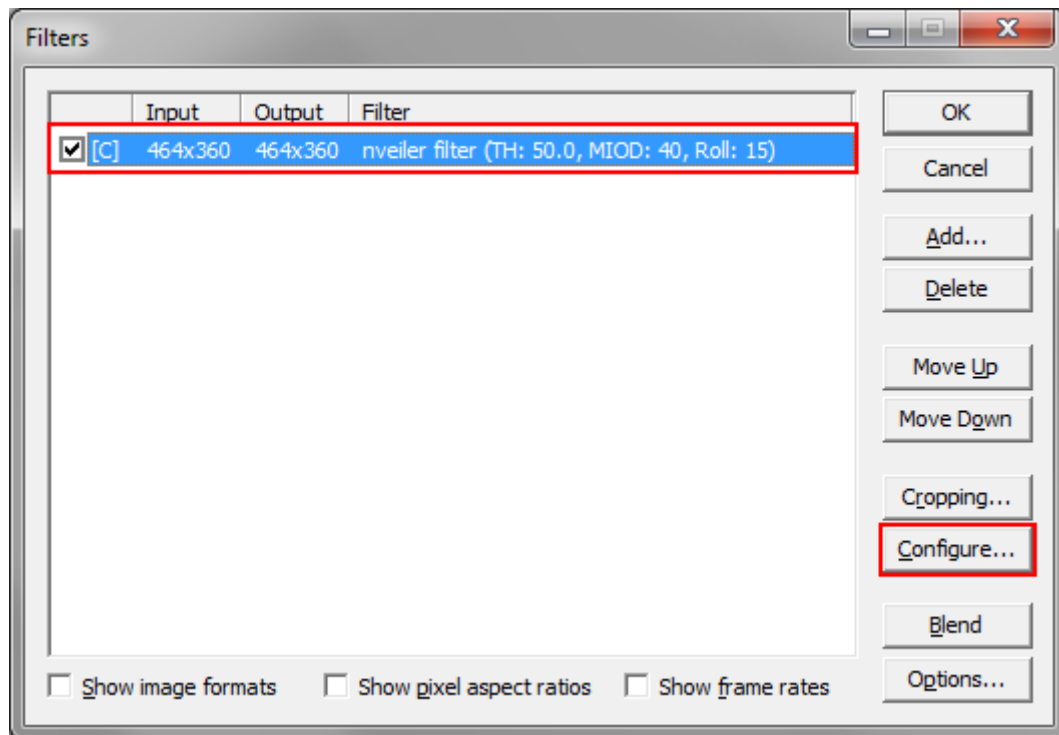
2. In *Add Filter* window locate and select “nveiler filter” and press *OK*.



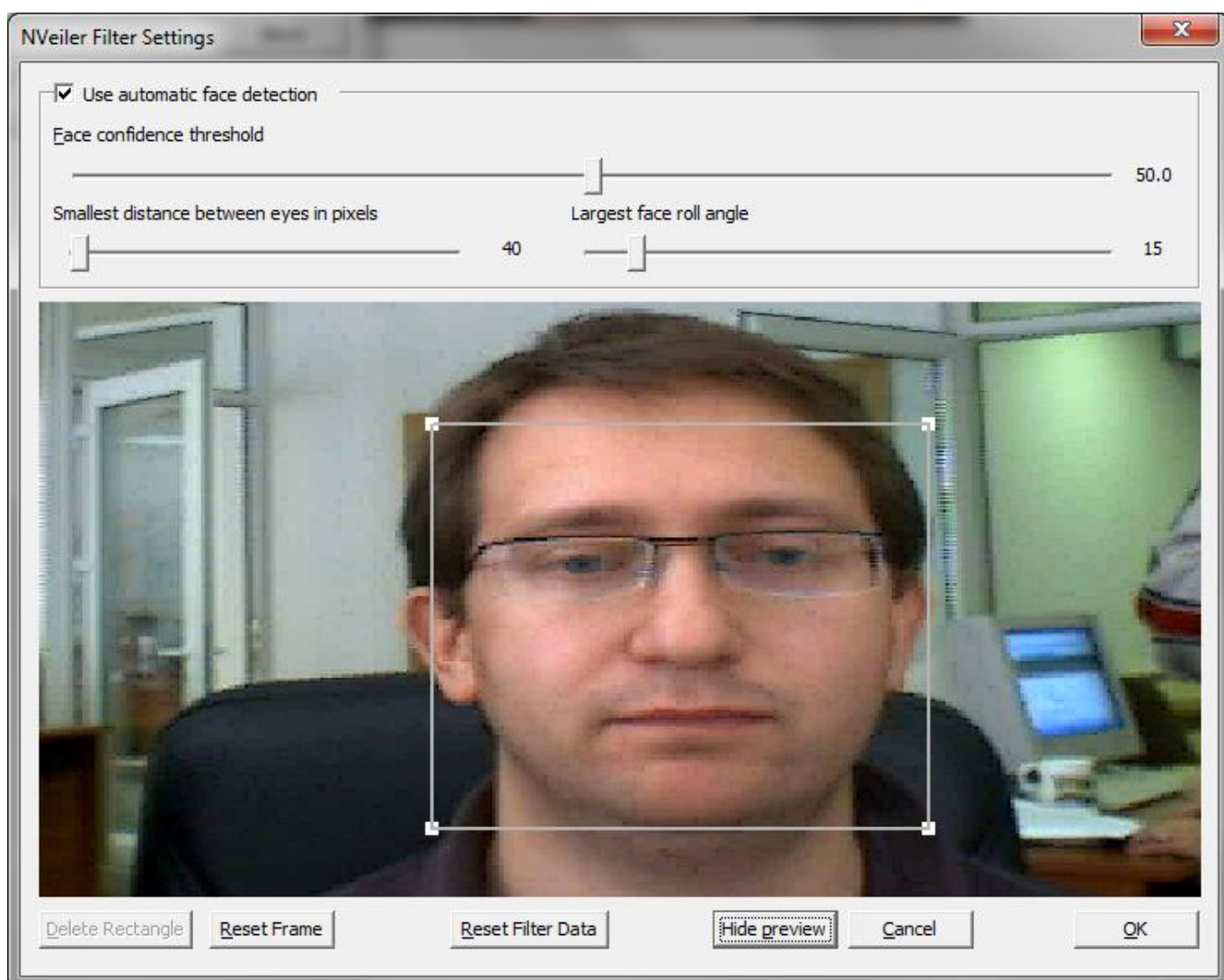
4.3. Manual object selection

To change face confidence threshold select *Video > Filters* from menu.

1. In *Filters* window select “nveiler filter” and press *Configure*.



2. To change detected or to select a new face just click and drag on desired region.



4.4. Switching between video frames

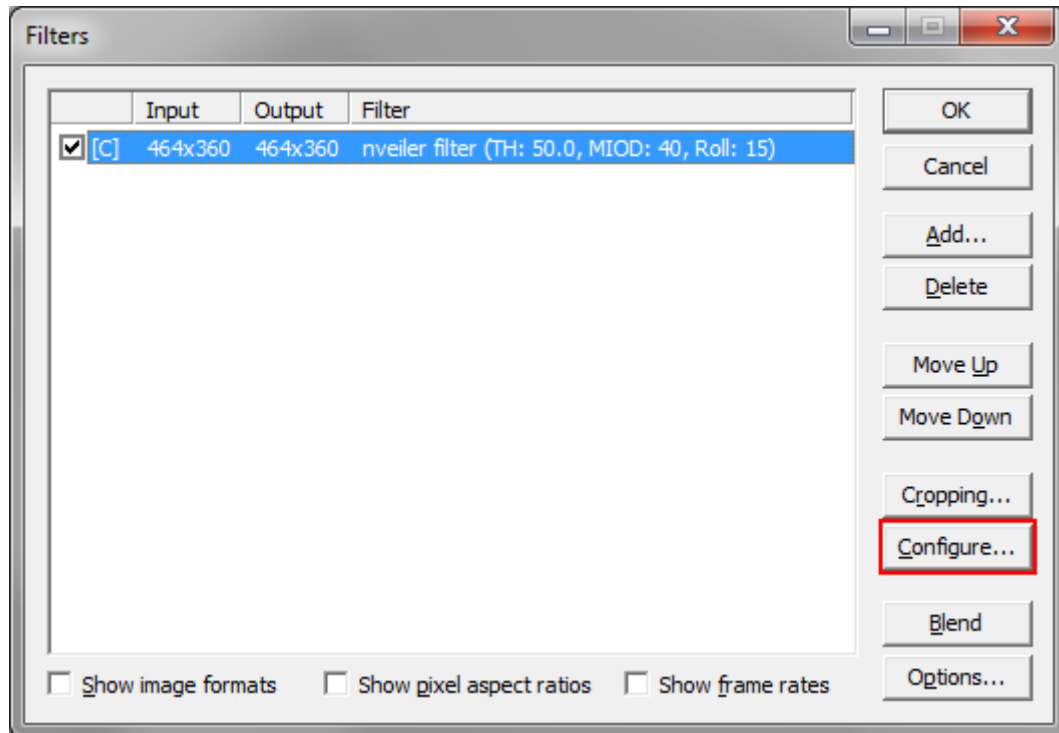
To edit face regions in other video frames use *Filter Preview* window frame selector at the bottom of the preview window. It is recommended to use left and right arrow keys on your keyboard to navigate between frames in preview window. This way tracking algorithm automatically locates faces in subsequent frames.



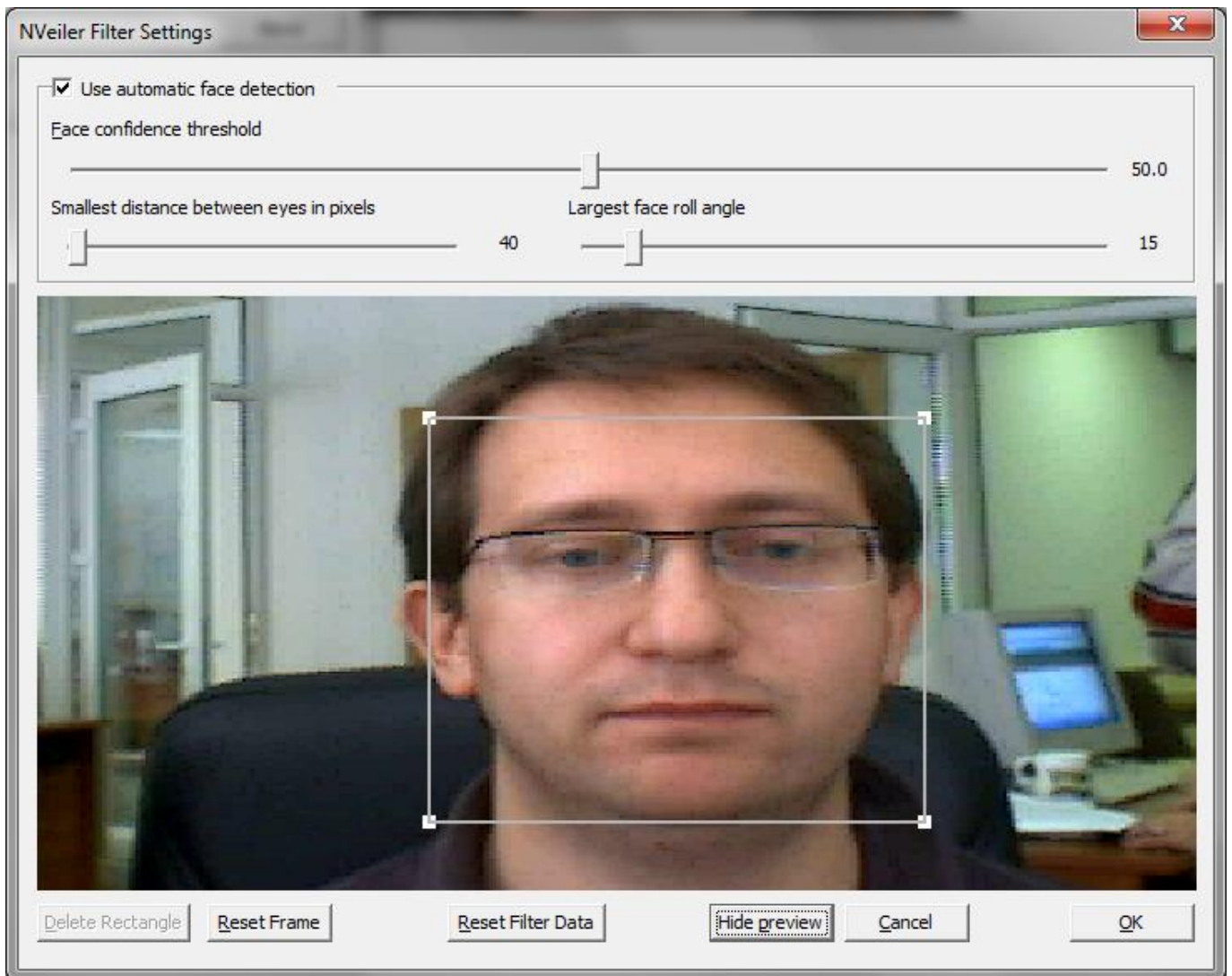
Preview window can be toggled using *Hide Preview/Show Preview* button in filter settings window.

4.5. Adjusting face detection parameters

To change face detection parameters from menu select *Video > Filters*. Select “nveiler filter” and press *Configure*.



In cases when automatic face detection is not needed it can be disabled by un-checking *use automatic face detection* checkbox. Depending on video characteristics face detection parameters can be adjusted to get better detection results.



Face confidence threshold - Specifies the threshold which is considered when looking for faces in an image. For each face candidate confidence parameter is calculated. With higher threshold value faces are selected more strictly by the face detection routines. Setting confidence threshold to a value less than 50 makes it more likely for face detector to detect false faces.

Largest face roll angle - Defines maximum roll angle deviation from frontal face in degrees which is considered when looking for faces in an image. Increasing roll angle values can help locating more faces but at a price of processing speed. Setting roll angle to more than 15 degrees slows down face detection dramatically.

Smallest distance between eyes in pixels – By setting this parameter one can specify the smallest face to look for in the image. Face size is expressed through the distance between the eyes that is measured in pixels. By adjusting this parameter one can optimize face detection speed. Increasing smallest distance value increases face detection speed.

5. Support

Please write an email to support@neurotechnology.com if you are unable to resolve problems related to *NVeiler Video Filter*.