

Manual

This software enables automated quality assessment of retinal fundus photos. It watches a folder selected by the user and performs a quality measurement on images as soon as they have been copied to the folder or created in the folder. The result is shown as a notification window.

The program provides an option for training it with new images. Currently it has been trained with optical nerve head centred retinal fundus images with a field of view of 22.5° and a resolution of 1600x1212. The training set consisted of 236 images of sufficient quality and 65 images of insufficient quality.

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J. Paulus, J. Meier, R. Bock, J. Hornegger and G. Michelson. Automated Quality Assessment of Retinal Fundus Photos. International Journal of Computer Assisted Radiology and Surgery. Nov 2010; 5(6):557–564

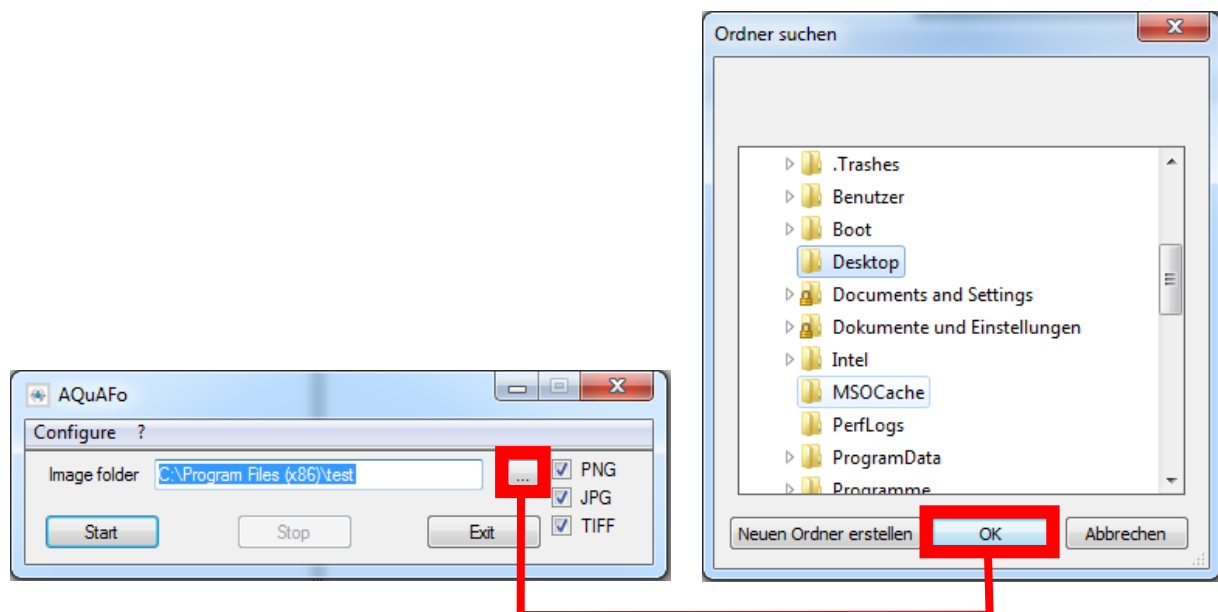
Installation and first start

Download and unzip *AQuAFo.zip* into an arbitrary folder. Execute *Setup.msi* and follow the instructions provided by the installer. After installation there will be a link in your start menu under the programs folder with “Pattern Recognition Lab at FAU\AQuAFo” to start the software.

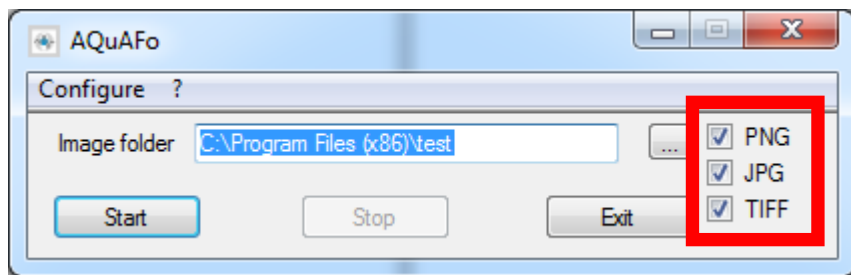
Important: If you use Windows Vista or Windows 7, the destination folder for the application must not have special writing permissions as the program requires writing files in its application folder. Examples for correct folders are all folders in the user’s directory. The installer will provide a valid default folder.

Quality assessment

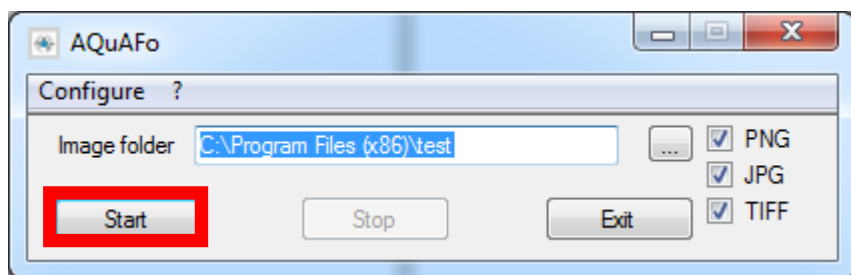
1) Select the folder that will be used for images to be quality measured.



2) Select the image file-formats that will be considered.

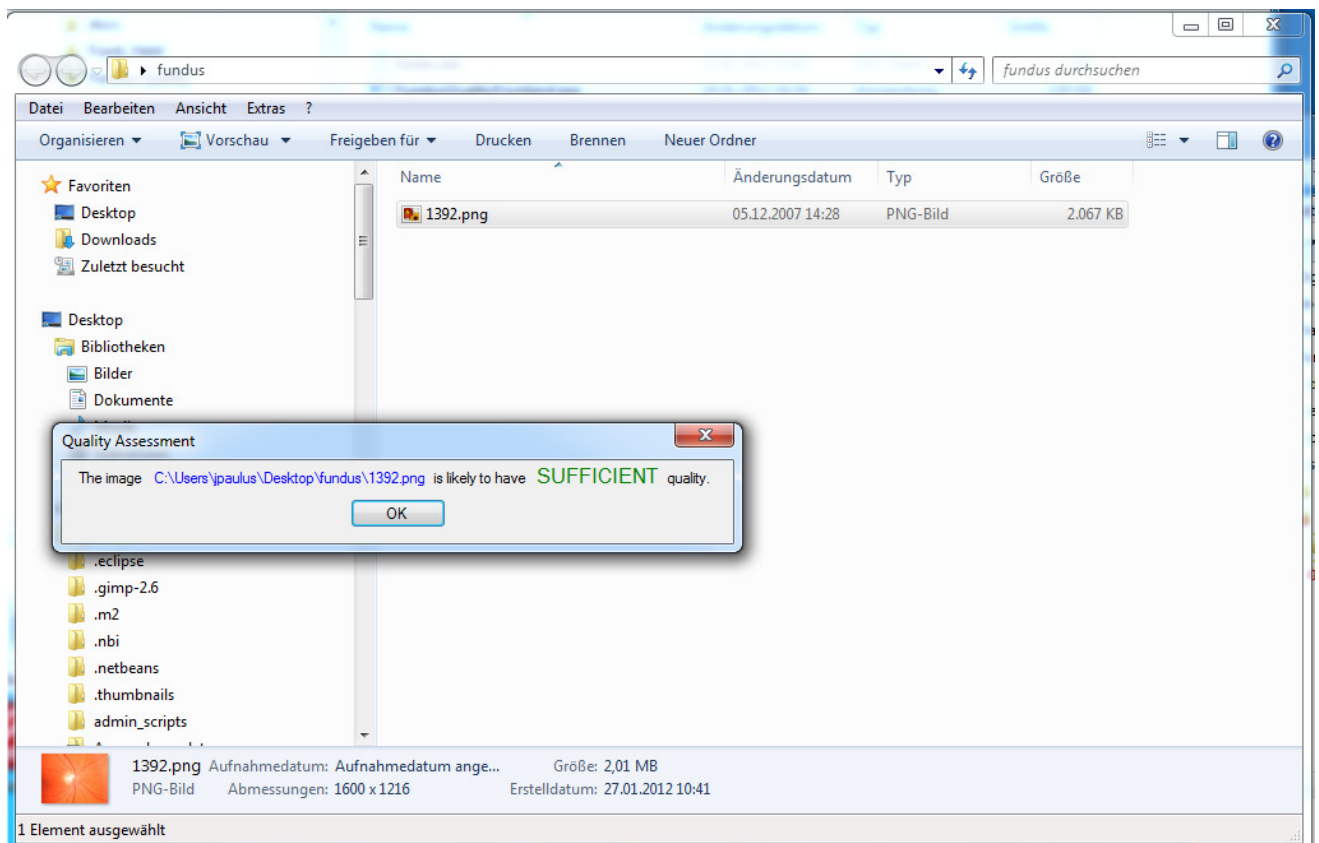


3) Press start to begin with the quality assessment.

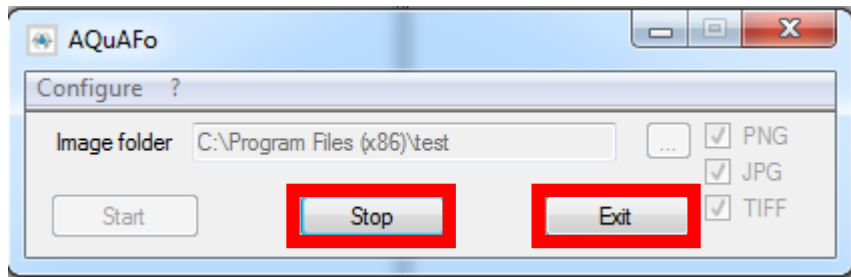


4) As soon as an image of the selected file-format is copied to the selected folder its quality will be estimated (assuming it to be a retinal fundus image) and a notification will appear.

Important: Images have to be copied to the folder or have to be created in the folder. The program recognizes only new files. Moving an image from some other folder on the local disk to the selected folder on the same local disk will not create a new file.

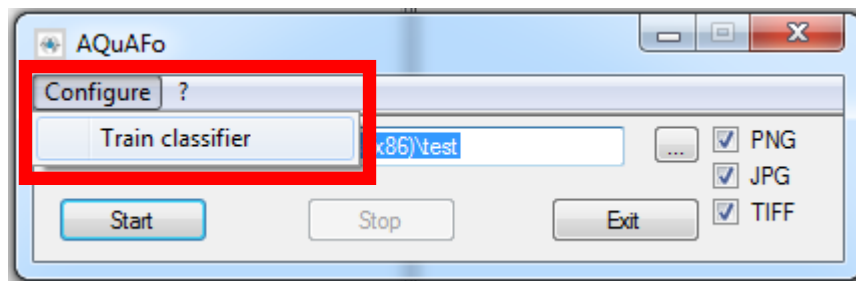


5) You can either stop the program from further watching the selected folder or quit it immediately.

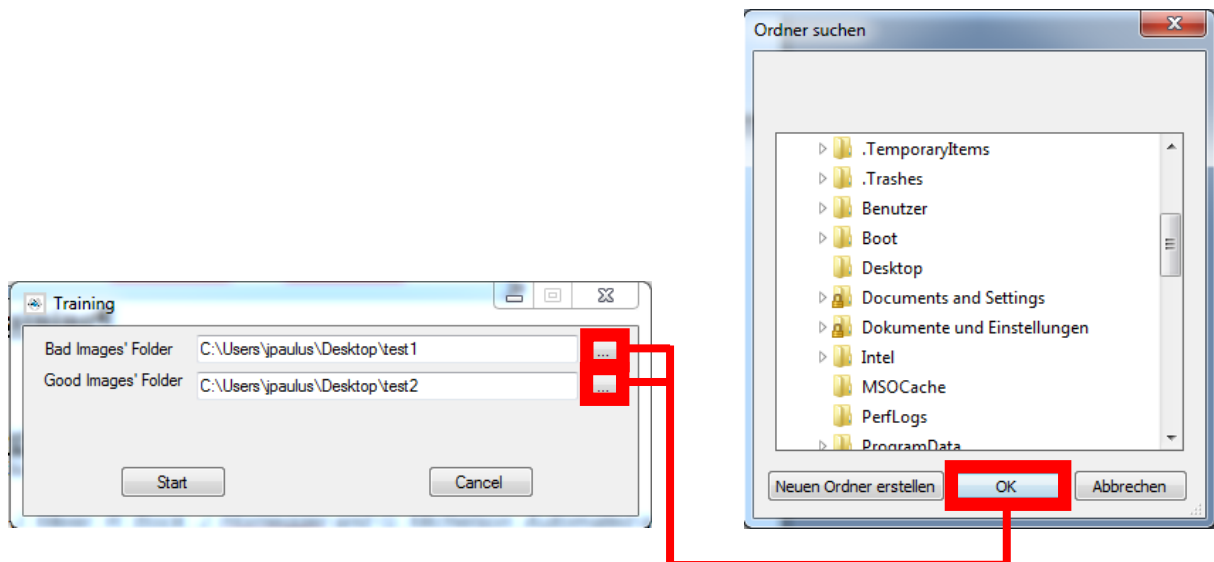


New training

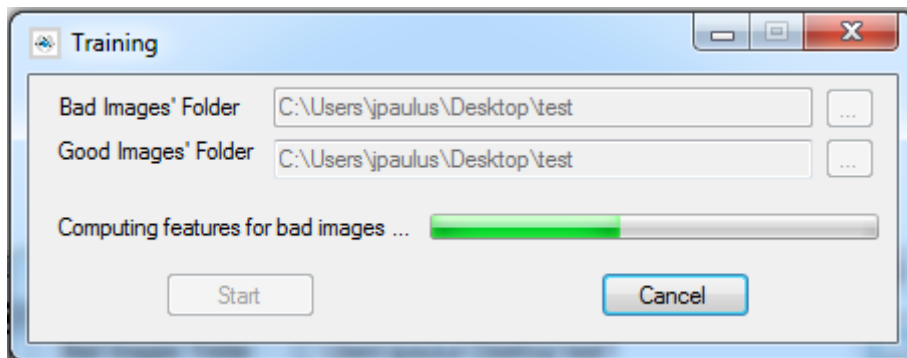
1) Click in the “Configure”-menu on the “Train classifier”-entry to open the training dialogue.



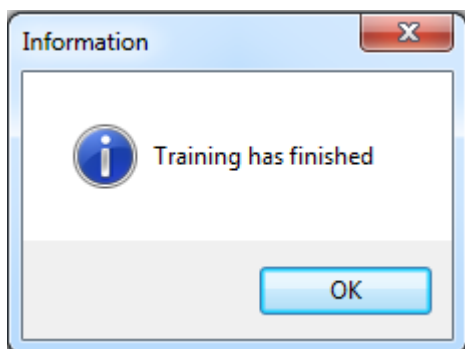
2) Select the folders containing the images with sufficient and insufficient quality respectively.



3) Start the training. A status dialogue will appear.



4) After the training has finished a status dialogue will appear indicating the success of the training. The old training information is immediately replaced by the new information.



Note: The old training information is not lost. The program provides backups of previous training information in its application folder. The files are named with <date_and_time>_svmModel.txt. To restore old training information replace svmModel.txt in the software's application folder with the desired <date_and_time>_svmModel.txt by renaming the backup. (E.g., 13.07.2010_17.43.26_svmModel.txt is the old training information. Rename svmModel.txt to svmModel_whatever.txt. Rename 13.07.2010_17.43.26_svmModel.txt to svmModel.txt to restore it.)

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