DIAMANT-FILM RESTORATION
HS-ART Digital Service GmbH

Dietrichsteinplatz 3
A-8010 Graz; Austria
Tel: +43 316 915 998
http://www.hs-art.com

What is new in DIAMANT-FILM Restoration V14?

The major innovations of this release compared to the previous versions are shortly described in the following.

In addition to this printed section, we also offer video tutorials. There are tutorials for general usage as well as for specific repair and filter parameters:

https://www.hs-art.com/index.php/tutorials/video-tutorials-overview

Highlights

- MAC version of the full DIAMANT-Film SUITE
- Artificial intelligence (AI): DeepInpaint, DeepScratch, DeepDust
- Updated portfolio of image stabilization filters
- Improved ProRes workflow with significant less data in the data repository

Improvements

- Optimized render workflow
- Smooth playback engine
- Improved integration into third party workflows
- And many more….

Machine Learning & Artificial Intelligence (AI)

The new AI-filters require a proper RTX graphic card and an AI-package to be installed in addition to the Diamant-Film software. Due to the size of the file (~2 GB), it needs to be separately downloaded from our install-website.

I. DeepDust

DeepDust combines different moving object detection methods in an intelligent way. Compared to the traditional Dust Filter, DeepDust is able to significantly reduce the number of false detections and increase the reliability of automatic film cleaning.

DeepDust is a first step for single image defect detection with AI support. It uses AI based object motion to better distinguish between unwanted defects and object motion. Further updates are planned in the near future.

II. DeepInpaint

DeepInpaint is also a new filter based on AI technology for spatio-temporal inpainting. The scratch filter has got a new repair method based on the DeepInpaint. It uses the new AI technology for an improved and content sensitive repair of detected vertical scratches.

The new DeepInpaint is a great alternative to the ExInPaintFilter and overcomes many flawbacks of this traditional filter, specifically in removing gate or camera hairs.

Handelsregister: FN 175664f; UID: ATU45810109; EORI: ATEOS1000008592
Raiffeisenbank Lieboch-Stainz BLZ: 38210, Konto: 27656, SWIFT/BIC: RZSTAT2G210, IBAN: AT253821000000027656

Dietrichsteinplatz 3
A-8010 Graz; Austria
Tel: +43 316 915 998
http://www.hs-art.com

III. DeepScratch

DeepScratch is based on a traditional technique for detection of vertical (resp. horizontal) lines and the repair by machine learning techniques.

Its interface is very similar to the one of Scratch Filter, but in most of the cases the temporal repair is significantly improved. Only on transparent vertical lines, the traditional approach with revealing should be taken as an alternative

Portfolio of Stabilization Filters

The whole portfolio of stabilisation filters have been re-worked and optimized.

I. StabAuto

The StabAuto filter is further improved.

Animated application factors allow best possible stabilisation in difficult motion situations. The preservation and limiters work now also with automatic zooming. Setting the background color simplifies checking of the stabilisation results.

A feature for new splice bump correction is included.

II. StabROITracking

This new filter brings together the easy usage of the former StabROI filter and the flexibility of the StabTracking filter. Thus interactive stabilization reaches a new level and ensures the best possible control of the stabilization process.

III. StabBorder

The mathematics for finding and tracking the borders has been improved reducing the false border detections significantly. The new detector allows for a wide automatic use in most situations.

A new mode where a single large ROI indicating the border has been added.

IV. StabCorner

This is a completely new filter, specialized to stabilize on the image frame corners.

The so called “stretch mode” provides a way to de-warp and correct film shrinkage. The filter is not available right with the release of V14, but will follow soon within the very next months.

Improvements of Restoration Filters

I. Linescratch

The classic linescratch filter has been reworked to allow better control on the detected scratches. The inpainting methods have been updated to the latest technologies.

Advanced contrast stretching methods help to detect scratches in difficult luminance situations.

Handelsregister: FN 175664f; UID: ATU45810109; EORI: ATEOS1000008592
Raiffeisenbank Lieboch-Stainz BLZ: 38210, Konto: 27656, SWIFT/BIC: RZSTAT2G210, IBAN: AT253821000000027656

Dietrichsteinplatz 3
A-8010 Graz; Austria
Tel: +43 316 915 998
http://www.hs-art.com

II. Dust

The classic dust filter received a new contrast enhancement method to work better on low contrast images and HDR content. The detection of simple small bright/dark spots have been improved to work better on scenes with high motion which allows less missed detections. The GPU acceleration for the dust filter has been improved for better performance.

III. OTHER

- Flicker (now also on MAC)
- Transform: Adding blanking option
- Option to save output also on unchanged reference frames
- Added auto align to interpolate tool

RestorationManager+

- New channel view options (RGB, YUV, HSV, LAB)
- Output on reference frames (configurable)
- Optimized timeline view
- Filter templates reworked
- Image still stores for better comparison

Optimized QC methods

- Improved high quality image display in all zoom levels
- Additional to LUTs a brightness and gamma display setting
- Improved annotation support
    - Reports with paintings on image
- New PDF Report
- Dust detection statistic on a graph

Project Manager

- Change Original Path - allow also changing the file format
- Export: Create SideBySide with original

Fileformats

- AVC-I MXF MainConcept plugin support
- For many file formats the export speed has been improved