YUVSOFT

YUV Denoising Technology

Versatile solution for noise suppression in video

Practically all video streams have noise of different nature and amplitude. Noise lowers subjective quality of video, leads to worse compression ratio during encoding and makes difficulties while doing other types of video processing

Primary applications

- Digital camcorders
- TV sets
- DVD and HD DVD recorders
- Video CD / DVD / DivX players
- Stream pre-processing to achieve better quality/compression ratio trade-off after encoding by lossy or lossless video codec, etc.

captured or transmitted noisy video

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denoised good-looking video

Key features

- Various speed/quality trade-off
- Competitive objective and subjective characteristics
- Fully automatic
- Preserves details
- Suitable for hardware implementations

Basic deliverables

- Reference model in "C"
- C+Assembler sources of an implementation optimized for PC (if required)
- Algorithm description
- Software description
- Verification instructions

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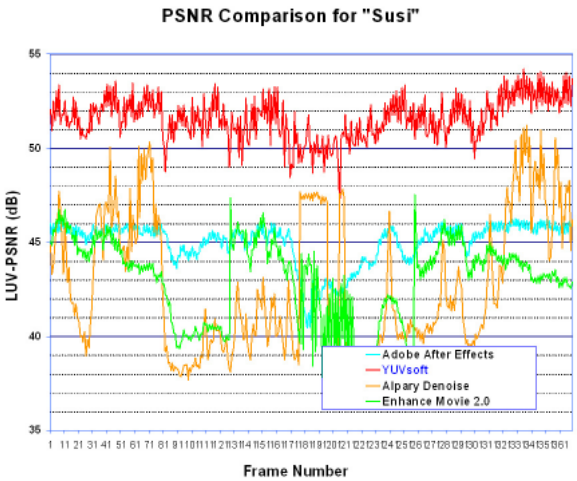
Comparison with competitors

- Adobe After Effects Denoising
- Enhance Movie 2.0 Denoising
- Alparysoft Denoise

Stream "Susi"

Alparysoft

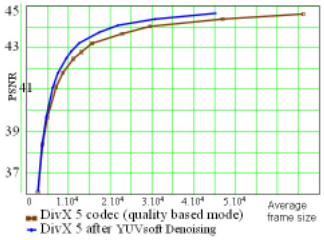
YUVsoft



	PSNR against the original
Adobe After Effects	45.0 dB
Enhance Movie 2.0	43.0 dB
Alparysoft Denoise	42.7 dB
YUVsoft	51.6 dB

Specification

- Several approaches with different speed/quality trade-off
- Fully automatic
- Preserves details
- While using as a pre-processing before compression, bitrate saving is up to 30% on high bitrates with the same PSNR and better visual quality for DivX 5 video codec



- Competitive visual quality
- No "ghost" artifact on the edges of moving objects
- Competitive objective quality of video
- 1 frame is used in a intraframe mode, 2 frames in a one-way motion compensation mode, and 3 frames in a bidirectional compensation mode
- Processing is performed within a local window with maximum size 48x48 pixels
- Memory usage is within 13 bytes per pixel
- Performance of the non-optimized "C" reference model of normal denoising is 10 FPS for a CIF video on a Pentium IV 2.8 GHz PC

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