TECHNO OFFER

Ultra-fast denoising image or signal

Keywords : noise filters / GPU / CCD sensor / CMOS sensor / split Bregman / medians / acquisition electronics

CONTEXT

The denoising of signals often involves the reduction of pulse-type noise generated by electronic CCD / CMOS sensors or the acquisition electronics associated with them.

The size of the processed image is limited because current solutions (median / convolution filters) have limitations in terms of processing speed and sizes of noise filters.

DESCRIPTION

The invention provides techniques for implementing and optimizing median / convolution / iterative filters for GPUs.

This results in advantageous performance in terms of processing speed, the size of the filters allowed, the quality of the images (for the medians).

In addition, the method is applicable to 1D (audio) or 2D (images) signals, and possibly 3D.

COMPETITIVE ADVANTAGES

- **Unmatched processing speed (120 billion pixels / second)**
- **Superior image quality than standard 2D median filters**
- **Usable filter sizes greater than the standards: up to 131x131 pixels**

Markets & applications

Medical imaging : processing of images captured by MRI

Microscopy : enhancement of electron microscopy images

Audiovisual : image and sound denoising in post-production

Geolocation / Telemetry : cleaning of GPS, Radar, Lidar signals

Development stage

Validation of the technique in an operational environment (TRL 6)

Research team

FEMTO Institute – Sciences & Technologies

Intellectual property

Software deposit in progress

Target partnership

License or co-development

CONTACT-US

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