Local Normalization

Launch Demo

Description

This demo illustrates the effect of a local normalization algorithm that uniformizes the local mean and variance of an image. This is especially useful for correct non-uniform illumination or shading artifacts.

Local normalization using smoothing operators

The local normalization of *f(x,y)* is computed as follows:

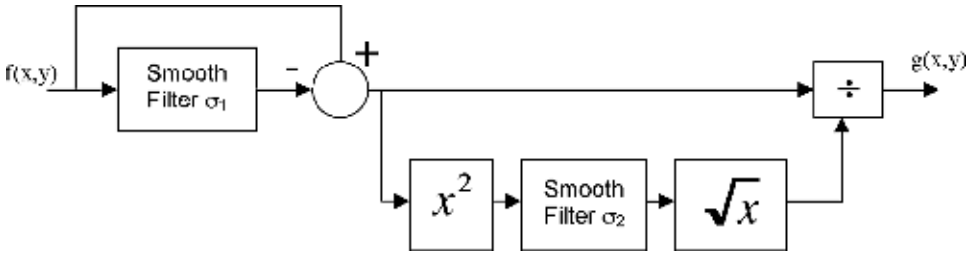
$$g(x,y) = \frac{f(x,y) - m_f(x,y)}{\sigma_f(x,y)}$$

where:

- *f(x,y)* is the original image
- $m_f(x,y)$ is an estimation of a local mean of *f(x,y)*
- $\sigma_f(x,y)$ is an estimation of the local standard deviation
- *g(x,y)* is the output image

The estimation of the local mean and standard deviation is performed through spatial smoothing.

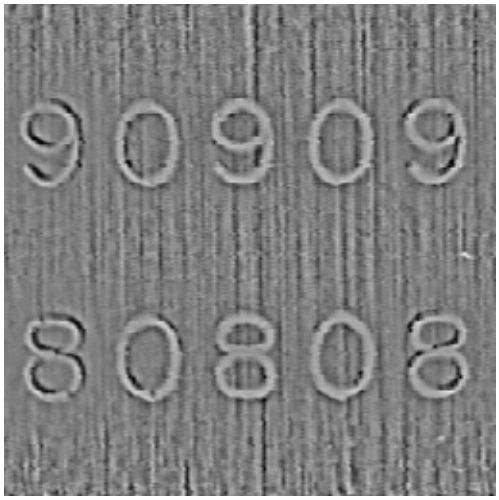
Diagram block



The parameters of the algorithm are the sizes of the smoothing windows, σ_1, and, σ_2, which control the estimation of the local mean and local variance, respectively.

Example

Input image



Output image

EPFL Swiss Federal Institute of Technology Lausanne
BIG Biomedical Imaging Group
BM-Ecublens, CH-1015 Lausanne, Switzerland

Imaging Web Demonstration

Contact: Webmaster

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