Information Content Auto-Focus (ICAF)

BYU #2017-062

DESCRIPTION

Researchers at BYU developed a new mathematical function for passive auto-focusing algorithms based on Information Content (IC). The invention is a novel application of the statistical concept of entropy, used to quantitatively represent the information present in each pixel.

PROBLEM SOLVED

In all forms of passive auto-focus systems that are used in cameras, an underlying mathematical algorithm attempts to numerically describe the extent of focus or blur in the image. Accordingly, the lens system in the camera adjusts to that. This invention takes a radically different approach to the quantification of the image blur or sharpness. The underlying mathematics is novel in it's approach and is extremely fast compared to existing algorithms, being a single step algorithm rather than a multi-step process.

Mean= 1.5631
Std= 0.0514

Mean= 1.5662
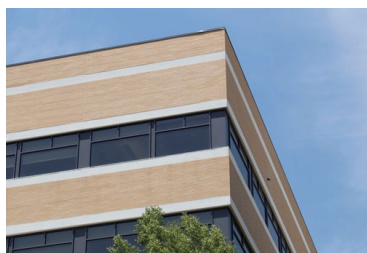Std= 0.0411

Mean= 1.5670
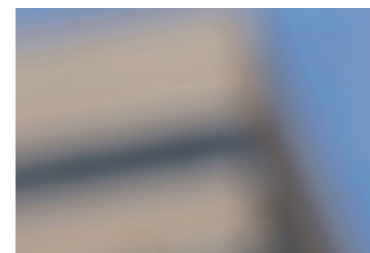Std= 0.0385

Mean= 1.5242
Std= 0.1425

Mean= 1.5312
Std= 0.1314

Mean= 1.5485
Std= 0.0955

Mean= 1.5704
Std= 0.0257

Mean= 1.576
Std= 0.0106

KEY ADVANTAGES

» *Extremely fast and computationally simple method*
» *Doesn't require defining any thresholds*
» *Doesn't require pre-processing of the images (e.g. enhancement of image contrast)*

Offer:
License
Exclusive
World Wide
All Fields of Use

APPLICATIONS

This technology could be of interest to photography software manufacturers as well as camera manufacturers.

IP STATUS:
US Provisional Application 62/542706

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BYU TECHNOLOGY transfer

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