VISTA – Automatic image color correction

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Problem definition

Remove the illumination influence on image colors

- the algorithm has to estimate the illumination and then perform chromatic adaptation to remove the illumination influence

Adjust the image brightness

- the brightness of every pixel is adjusted according to its local neighborhood

Real-time performance is required

- the operations are performed using various subsampling techniques without loss of quality

Potential applications

Image enhancement

- making the images more appealing

Digital camera color constancy

- performing a fast illumination estimation
- high accuracy

Tone mapping

- dynamic range compression
- converting HDR image to LDR images
- producing high quality results

Techniques

Image processing

- fast filtering
- subsampling

Advanced data structures

- efficient usage of image data
- enabling real-time performance

Machine learning

- using the illumination statistics to increase the illumination estimation accuracy

Results

Before white balance and brightness adjustment

After white balance and brightness adjustment

Contact

VISTA
Computer Vision Innovations for Safe Traffic

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