Study of higher order image descriptors
Article overview

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This is an overview of the types of descriptors used in various articles.

Lowe 2004 [Low04]

SIFT descriptor for 4x4 cell blocks of 4x4 pixel cells. Each cell has a histogram of unsigned gradient orientations divided into 8 bins. ($16 \times 8 = 128$ dimensions)

Dalal 2005 [DT05]

HOG descriptor for 3x3 cell blocks of 6x6 pixel cells used for pedestrian detection. Each cell has a histogram of unsigned gradient orientations divided into 9 bins. ($9 \times 9 = 81$ dimensions)

Felzenszwalb 2008 [FMR08]

Descriptor for 2x2 cell blocks of 8x8 pixel cells used for general object detection, used in a deformable parts model (DPM). Each cell has a histogram of unsigned gradient orientations divided into 9 bins.

Crosier 2010 [CG10]

Descriptor for 200x200 pixel texture regions. Consists of a histogram of 6 Basic Image Features (BIFs) built from 2-jet information at 4 different scales. ($6^4 = 1296$ bins/dimensions)

Larsen 2012 [LDDP12]

$\mathcal{J}_4$-grid2 descriptor for generic 2x2 pixel regions. Consists of 4-jet information at each pixel. ($4 \times 14 = 56$ dimensions)

Pedersen 2013 [PSSZI]

Descriptor for 100x100 pixel regions of galaxies used to estimate specific star formation rate (sSFR). Consists of histograms of gradient orientation in 8 bins and shape index in 9 bins, at 8 different scale levels.

References

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