Počítačové videanie

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December 17, 2019

Algorithm 1: Main of function

input: original = Image from computer (64x128 px)
Result: Visualized descriptors
Main *():*
    $Bitmap$ = MakeImageGrayscale($original$);
    $List < Bitmap >$ cells = GetCells($Bitmap$);
    foreach *cell in cells* **do**
    $List < double[] >$ hists = GetHistForEveryCell($cell$);
    VisualizeDescriptor($hists$);

Algorithm 2: Make image gray-scale

Result: Gray-scale image
MakeImageGrayscale ($Bitmap$)
    create gray-scale color matrix;
    convert image to grayscale using this matrix;

Algorithm 3: Divide image into separate cells (8x16)

Result: ListOfBitmaps
GetCells ($Bitmap$)
    Divide bitmap into cells (each cell 8x8 px);
    Add this cells to list of bitmaps;

Algorithm 4: Create histogram for every cell

Result: double[36]
GetHistForEveryCells ($Bitmap$)
    Create histogram based on magnitude and orientation of every pixel in given Bitmap;
    $Magnitude = sqrt([Gx^2 + Gy^2])$;
    $Orientation = atan(Gy/Gx)$;

Algorithm 5: Visualize descriptors

input: double[36]
Result: Bitmap
VisualizeDescriptor ($double$[36])
    Create sets of degrees, adds them to list of 8 sets. For every set there is created direction arrow.