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```
function nlabels= EnforceSupervoxelConnectivity(img_Lab, labels)
```

enforce the connectivity of supervoxel

input: img_Lab-image in LAB color space, labels-superpixels label output: connectivity enforced super-pixel

init

```
dx = [-1, 0, 1, 0];
dy = [0, -1, 0, 1];
[height, width, channel] = size(img_Lab);
[M, N] = size(labels);
nlabels = (-1)*ones(M, N);


label = 1;
adjlabel = 1;
xvec = zeros(height*width, 1);
yvec = zeros(height*width, 1);
m = 1;
n = 1;
```

```
Not enough input arguments.

Error in EnforceSupervoxelConnectivity (line 9)
[height, width, channel] = size(img_Lab);
```

main process

```
for j = 1: height
    for k = 1: width
        %  looking for unlabeled pixel
        if (0>nlabels(m, n))
            % label a new voxel
            nlabels(m, n) = label;
            %take a record for staring point
            xvec(1, 1) = k;
            yvec(1, 1) = j;
            %adjlabel for adjacent voxel
            for i = 1: 4
                x = xvec(1, 1)+dx(1, i);
```

```
                    y = yvec(1, 1)+dy(1, i);
                    if (x>0 && x<=width && y>0 && y<=height)
                        if (nlabels(y, x)>0)
                            adjlabel = nlabels(y, x);
                        end
                    end
                end
                %searching, compute voxel size
                count = 2;
                c = 1;
                while (c<=count)
                    for i = 1: 4
                        x = xvec(c, 1)+dx(1, i);
                        y = yvec(c, 1)+dy(1, i);
                        if (x>0 && x<=width && y>0 && y<=height)
                            if (0>nlabels(y, x) && labels(m, n)==labels(y,
 x))
                                xvec(count, 1) = x;
                                yvec(count, 1) = y;
                                nlabels(y, x) = label;
                                count = count+1;
                            end
                        end
                    end
                    c = c+1;
                end
                %combine small voxel
                if (count<600)
                    for c = 1: (count-1)
                        nlabels(yvec(c, 1), xvec(c, 1)) = adjlabel;
                    end
                    label = label-1;
                end
                label = label+1;
            end

            % prepare for next loop
            n = n+1;
            if (n>width)
                n = 1;
                m = m+1;
            end

        end
    end

    end
```

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