Attentional saliency in images

Students pick an image and circle regions that appear to draw attention to themselves: salient regions.

The instructor runs the images through the Itti-Koch saliency algorithm, which marks pixels that ought to jump out at viewers because they represent regions that are different from their surroundings.

Background and instructions given to students

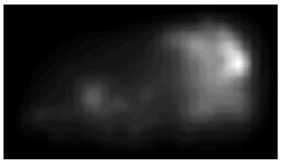
Github page for source code

Sample results

The algorithm identifies image regions that stand out based on several basic visual features, including color, intensity and edge orientation.

original image

Itti-Koch saliency map



marked image

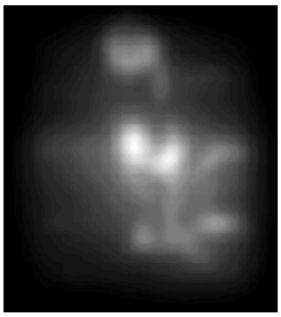
saliency map overlayed

most salient (95%ile) parts

It sometimes appears that the algorithm is picking out complex objects that are similar to what humans ultimately notice ...

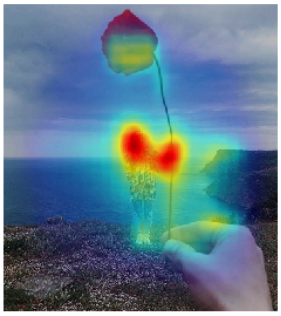
original image

Itti-Koch saliency map

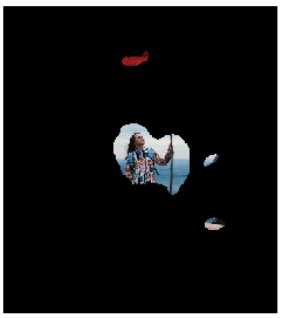


marked image

saliency map overlayed

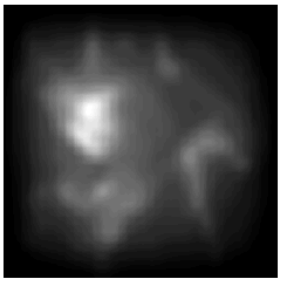


most salient (95%ile) parts

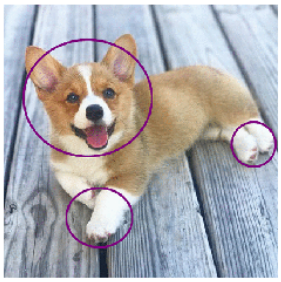


original image

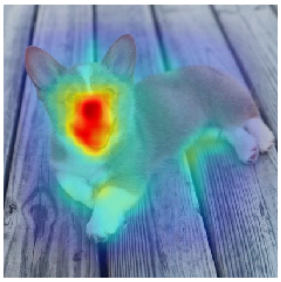
Itti-Koch saliency map



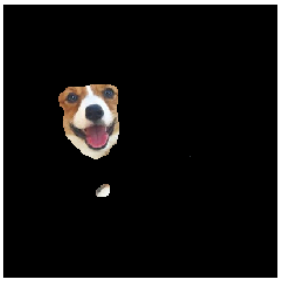
marked image



saliency map overlayed



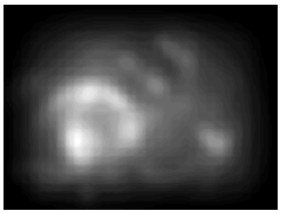
most salient (95%ile) parts



... however, the algorithm actually works in “local” fashion based on small, often meaningless visual differences.

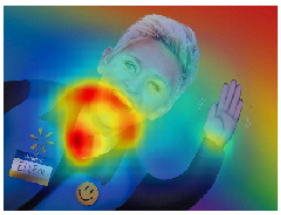
original image

Itti-Koch saliency map

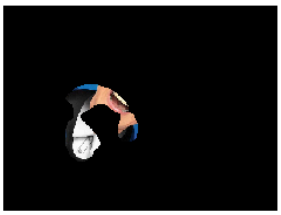


marked image

saliency map overlayed

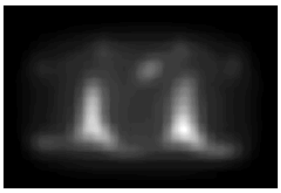


most salient (95%ile) parts



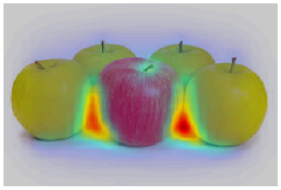
original image

Itti-Koch saliency map



marked image

saliency map overlayed



most salient (95%ile) parts