

**Reviews For Paper**

**Paper ID** 159  
**Title** Global Contrast based Salient Region Detection

**Masked Reviewer ID:** Assigned\_Reviewer\_1

**Review:**

Please briefly describe the paper's contributions, and list its positive and negative points.	<p>This paper presents a saliency mapping approach based on global, histogram-based contrast measure. Then, it goes on to suggest several applications in which the proposed saliency can improve performance.</p> <p>Pros -</p> <ul style="list-style-type: none"><li>* Clearly written and presented</li><li>* It contains an extremely valuable comparative study of previous saliency measures and nice discussion of the considerations that led to the choice of competitors. I liked it. Although not the main intended contribution I actually find this one to be the prime value of this work.</li></ul> <p>Cons -</p> <ul style="list-style-type: none"><li>* VERY incremental. The main idea of histogram-based contrast measure is neither too deep nor novel (appeared already in [28]) and the main intended contribution of the paper was to apply it for color, while doing some representational compression and smoothing.</li><li>* Results not always convincing</li></ul>
<b>Overall Rating</b>	Weakly Accept
Please explain your rating. If the paper is so unclear that it should be rejected, please explain that. If the paper is not novel please explain, citing the work that makes it so. You should take into account whether this paper is of wide interest, or addresses only a narrow community. You should mention whether the paper cites prior work fairly or not. You should comment on the paper's correctness and experimental evaluation. A paper that is definitely correct has conclusions supported by flawless arguments	It's mostly for the comparative study of previous saliency measures that I am

<p>(including correct proofs, formulas, and so on) or by well-designed and executed experiments, or perhaps by both. A convincing paper has strong arguments or limited but compelling experiments. Minor technical errors or experimental design and execution count against a paper, but it might have redeeming features (which you would explain). If a paper has major problems, it should be rejected. Your rating should not consider whether or not the paper might become an oral or poster.</p>	<p>willing to go beyond borderline paper.</p>
<p>Additional comments to author(s)</p>	<ul style="list-style-type: none"> <li>* Refs [7,25] in line 49 are mentioned in the wrong place?</li> <li>* In contrary to the claim of the authors, Treisman, whose theory is mentioned in the sentence beginning in line 52 (and whose name is misspelled!), preceded Koch and Ullman rather than followed them.</li> <li>* "Global" and "local" seems to get mixed too easily. E.g., "global considerations" in line 178 becomes "All such local methods" in line 180.</li> <li>* Most example images are "easy". How about some more challenging inputs where saliency is more than figure ground segmentation of a single object on some contrasting background?</li> <li>* Ref [17] in the bibliography has some style problems.</li> </ul>

**Masked Reviewer ID:** Assigned\_Reviewer\_2

**Review:**

<p>Please briefly describe the paper's</p>	<p>The paper presents a simple method for extracting salient regions in images based on color contrast computed through histograms. Local as well as global contrast is considered. First a histogram-based method is introduced. By reducing the number of colors based on the statistics in the image an efficient algorithm is obtained. Then spatial relations are included in a region based version. Experiments on a database used for salience computations in earlier work, together with segmentation both using thresholding and graph cuts show that the presented method perform well compared to most of the well-known methods.</p> <p>A good paper presenting a simple, straightforward idea that works very well.</p>

contributions, and list its positive and negative points.	The main reservation one can have is that experiments on a database don't tell us the full story. For instance, the authors themselves note that highly textured backgrounds could pose problems and that such images seem to be absent in the database. In general, there are many choices in the developing the algorithm: requantizing the colors, weighing the colors based on frequency, measuring distance between regions as distance between centroids, etc. Each such choice can affect performance in specific cases. Which are they? How does the method work if you have a red spot on green background (with noise) or similar more general examples with many dots, or for lots of elongated regions mixed with round ones, and so on. Controlled experiments are needed in addition to those on databases. In addition it's not evident that all other salience methods are designed to find regions.
Overall Rating	Weakly Accept
Please explain your rating. If the paper is so unclear that it should be rejected, please explain that. If the paper is not novel please explain, citing the work that makes it so. You should take into account whether this paper is of wide interest, or addresses only a narrow community. You should mention whether the paper cites prior work fairly or not. You should comment on the paper's correctness and experimental evaluation. A paper that is definitely correct has conclusions supported by flawless arguments (including correct proofs, formulas, and so on) or by well-designed and executed experiments, or perhaps by both. A convincing paper has strong arguments or limited but compelling experiments. Minor technical errors or experimental design and execution count against a paper, but it might have	Novel and simple idea, well-written paper, good experimental results, although some experiments to analyze performance in detail would be of interest. Moreover, the resizing application based on salience has been addressed in other work that should be discussed.

redeeming features (which you would explain). If a paper has major problems, it should be rejected. Your rating should not consider whether or not the paper might become an oral or poster.	
Additional comments to author(s)	<p>Minor points:  Line 49: Ref [7,25] don't concern computer vision  Line 82: Treisman  Line 89: Ref [17] incomplete  Line 101: "regions are"  Line 239: Since formula (1) is a sum <math>f_j</math> are strictly not frequencies  Line 389: <math>k = (1,2)</math></p> <p>Resizing based on saliency was addressed by Achanta and Süsstrunk in a paper at ICIP 2009. This should be mentioned and discussed in the appropriate context.</p>

Masked Reviewer ID: Assigned\_Reviewer\_3

**Review:**

Please briefly describe the paper's contributions, and list its positive and negative points.	<p>The paper suggests simple fast heuristic methods for saliency-map computation that seem to provide great results. The first method assigns a global saliency measure for each pixel by simply associating the saliency of a pixel to the sum of differences of its color to all the other image pixels colors. To accelerate computation the image is pre-quantized and histograms are used. To reduce artifacts there is smoothing in the color-space. The second method is region-based and includes spatial considerations strengthening local rarity: it starts with a pre-segmentation to super-pixel, and assign a saliency to each region by summing its histogram difference from the other regions histograms. The distances are weighted by spatial distances.</p> <p>The suggested saliency maps perform better in precision-recall compared to 8 recent methods on 1000 images of an acceptable dataset. Very nice salient-object-segmentation results are shown using GrabCut initialized with the suggested saliency maps. The results for all 1000 images are included in the supplementary file, as well as the software and source code. Demonstrate also the use and advantages of the suggested saliency maps for retargeting and rendering. As the method does not consider texture, it does not work good when the background is textures or when there are non-salient regions with color similar to the salient object.</p>
Overall Rating	Weakly Accept
Please explain your rating. If the paper is so unclear that it should be rejected, please explain that. If the paper is not novel please explain, citing the work that makes it so. You should take into account	

<p>whether this paper is of wide interest, or addresses only a narrow community. You should mention whether the paper cites prior work fairly or not. You should comment on the paper's correctness and experimental evaluation. A paper that is definitely correct has conclusions supported by flawless arguments (including correct proofs, formulas, and so on) or by well-designed and executed experiments, or perhaps by both. A convincing paper has strong arguments or limited but compelling experiments. Minor technical errors or experimental design and execution count against a paper, but it might have redeeming features (which you would explain). If a paper has major problems, it should be rejected. Your rating should not consider whether or not the paper might become an oral or poster.</p>	<p>For:  Very nice results, good benchmarking.  Straight forward solution that works.</p> <p>Against:  No theoretic novelty or interest.</p>
<p>Additional comments to author(s)</p>	<p>Technical comments/typos  -----  1) line 49: I believe you did not intend to cite papers 7 and 25 in the context of computer vision saliency.  2) lines 177-181: when you describe Goferman's et al method you mention it makes global considerations, but then (line 80) say "all such local methods", so it does not sound right. Maybe you should make the distinction between region-based and non-region-based instead of between local and global, which is different.  3) line 39: didn't you mean " However, we DO NOT perform..."  4) line 389: it should be "<math>k=\{1,2\}</math>"</p>

5) better use only reference 13 and omit 12  
6)reference [17]: fix author names.