

Contrast Based Filtering for Salient Region Detection

Project ID - 3

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1 Main Goals

To realise and understand the concept of saliency map and implement it using contrast based filtering techniques.

2 Problem Definition

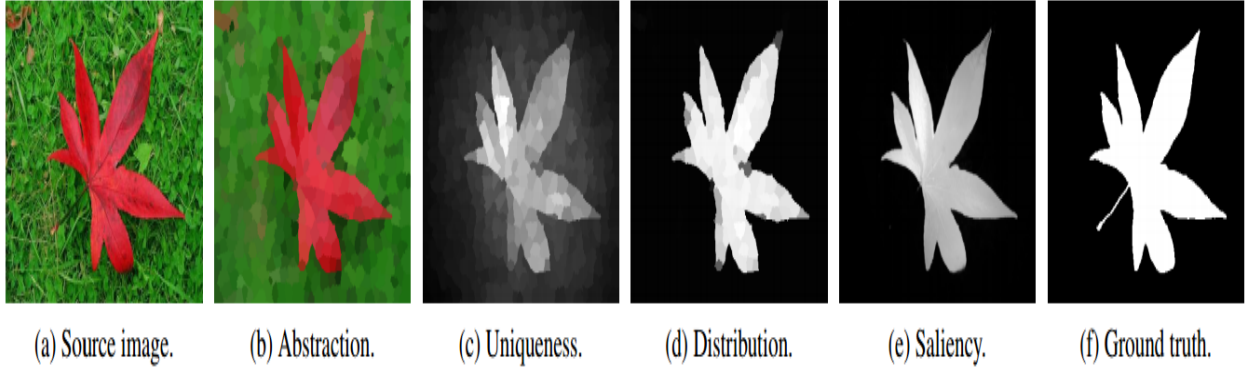
Saliency estimation has become a valuable tool in image processing. Yet, existing approaches exhibit considerable variation in methodology, and it is often difficult to attribute improvements in result quality to specific algorithm properties. In this paper we reconsider some of the design choices of previous methods and propose a conceptually clear and intuitive algorithm for contrast-based saliency estimation.

The algorithm consists of four basic steps. First, the method decomposes a given image into compact, perceptually homogeneous elements that abstract unnecessary detail. Based on this abstraction we compute two measures of contrast that rate the uniqueness and the spatial distribution of these elements. From the element contrast derive a saliency measure that produces a pixel-accurate saliency map which uniformly covers the objects of interest and consistently separates fore and background.

3 Github Link:

<https://github.com/deepakksingh/Contrast-Based-Filtering-for-Salient-Region-Detection>

4 Results



5 Tasks Assigned

Ashish :

Abstraction

Element Distribution

Deepak:

Element uniqueness

Saliency Assignment

6 Project Milestones and Expected Deadlines

- Oct 1 - Oct 3 : Getting accustomed to GitHub environment.
- Oct 4 - Oct 9 : Build conceptual understanding and explore contrast based filters.
- Oct 17 - Oct 24 : Implement abstraction and element uniqueness section.
- Oct 25 - Nov 1 : Implement element distribution and saliency assignment.
- Nov 3 - End : Miscellaneous tasks.