Subject Detection and Manipulation
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Motivation
Many interesting artistic manipulations can be done on images and video if the subject can be reliably detected:

- background blurring
- automatic refocusing, exposure, white balance
- object image search

Here we implement and extend existing methods for detecting salient objects.

We then use the result to demonstrate an interesting artistic manipulation, whereby we desaturate the background and generate a simulated stereo view of the subject, viewable as an animated GIF.

Evaluation Metric
We used a subset of 200 images out of the 20,000 in [1], in which each image has exactly one salient object, and for which a ground truth bounding box of the salient object is known.

Using Jaccard similarity of the bounding boxes as our performance metric, we increased accuracy to 68% over 200 images by using the three derived saliency maps and our new segmentation scheme.

Results

2 derived masks developed for the project