AUTO IMAGE COMPOSITION

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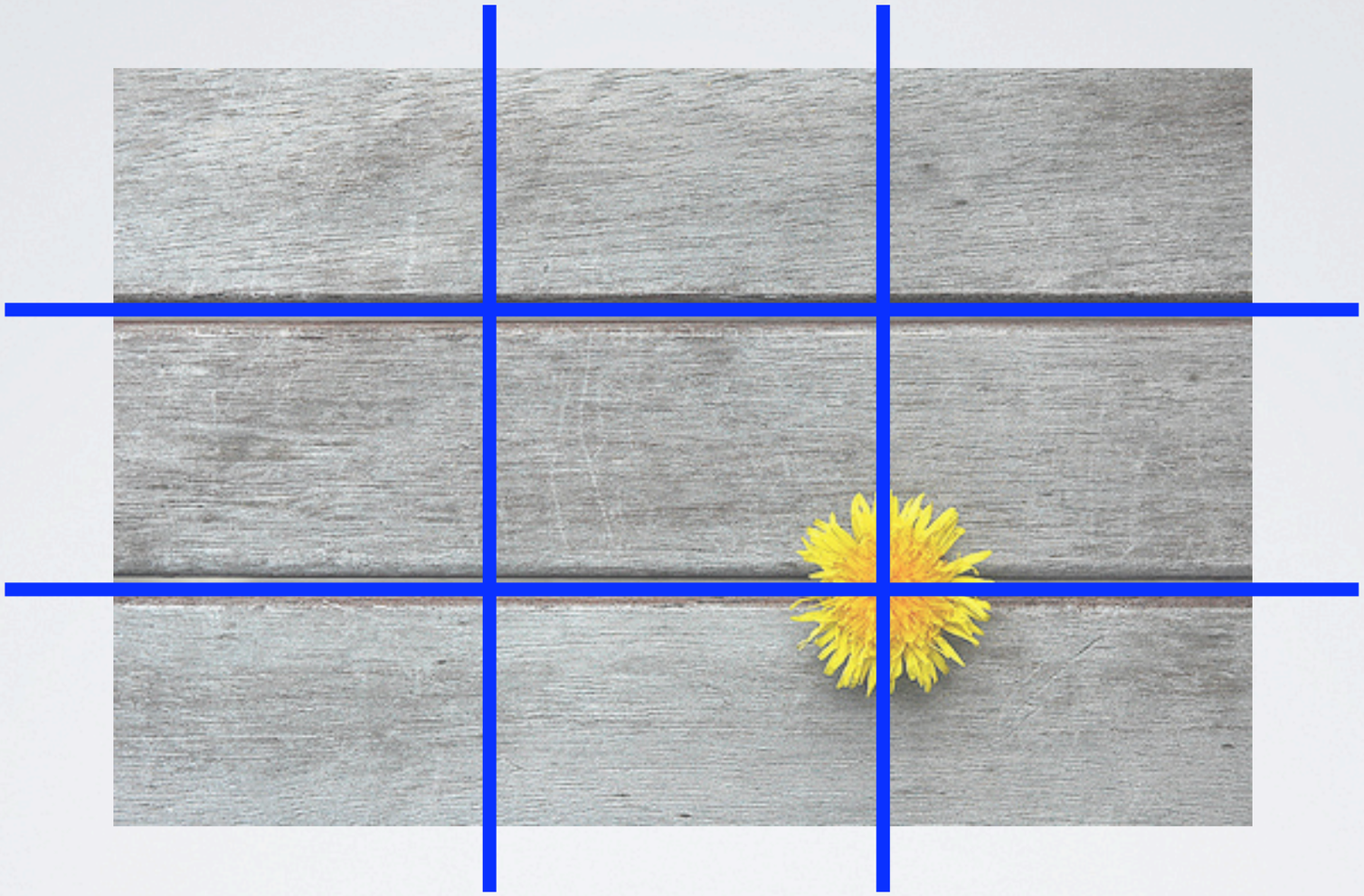
How it works: Scoring the Image.

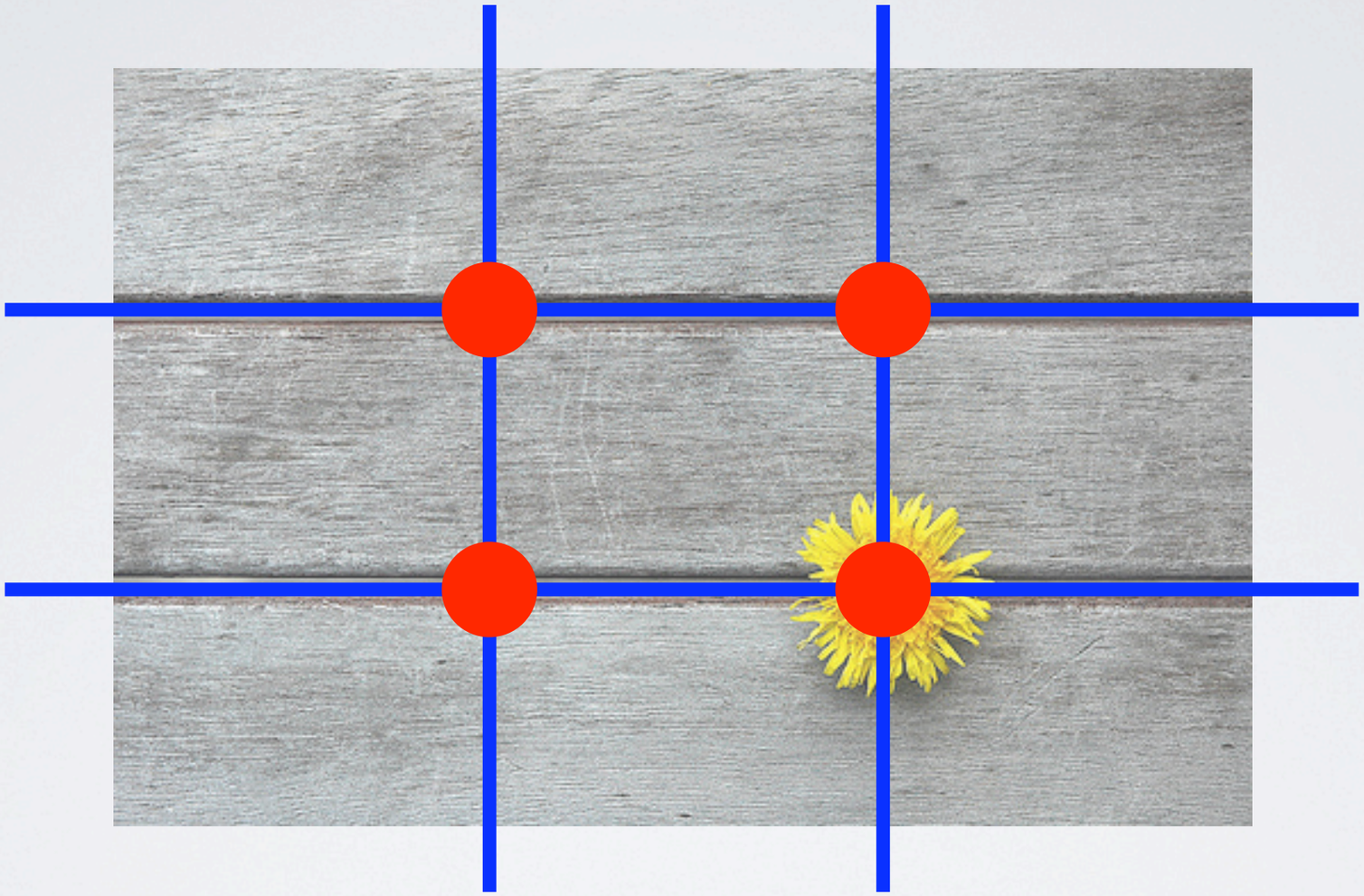
L. Liu et al. 2010. Optomizing Photo Composition. *In EUROGRAPHICS 2010.*

How it works.



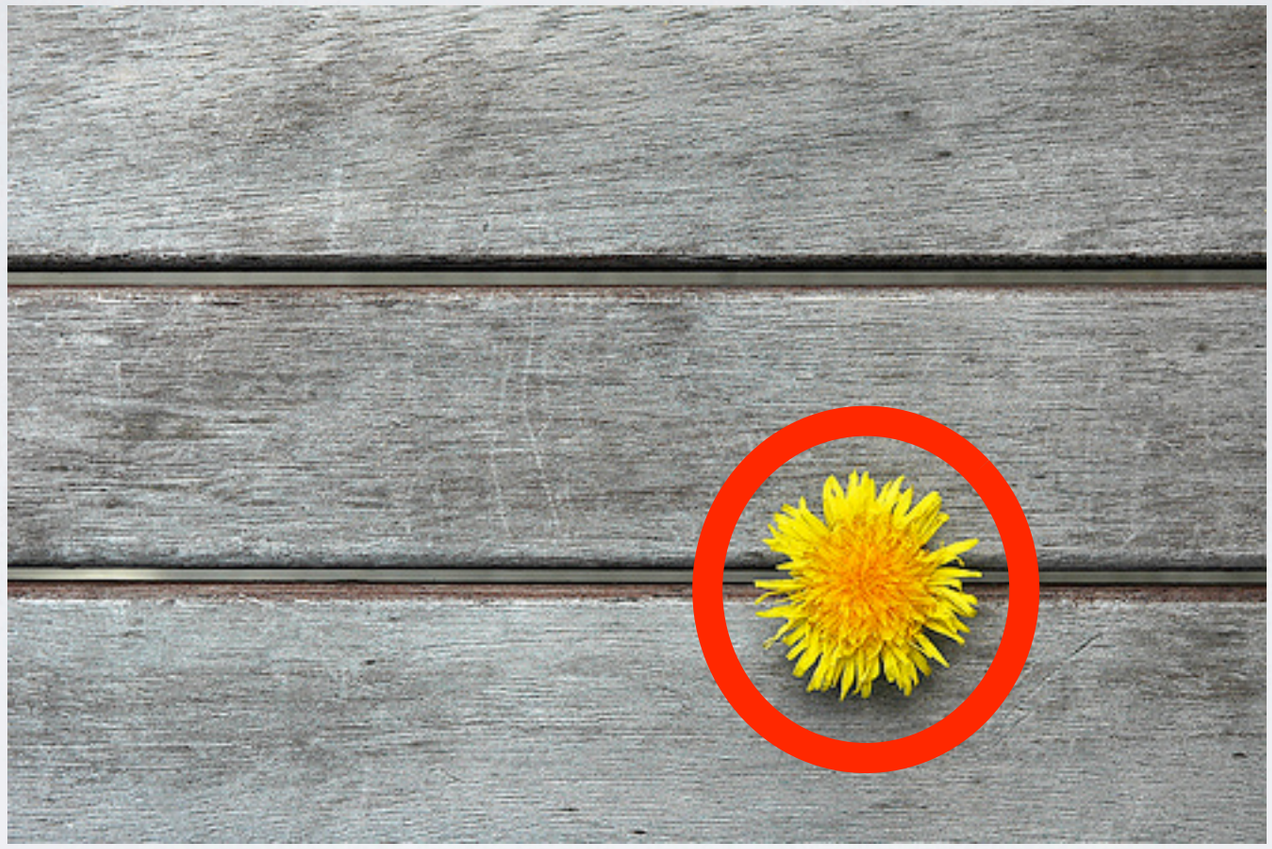
Basic Composition Rule:
Rule of Thirds

How it works.

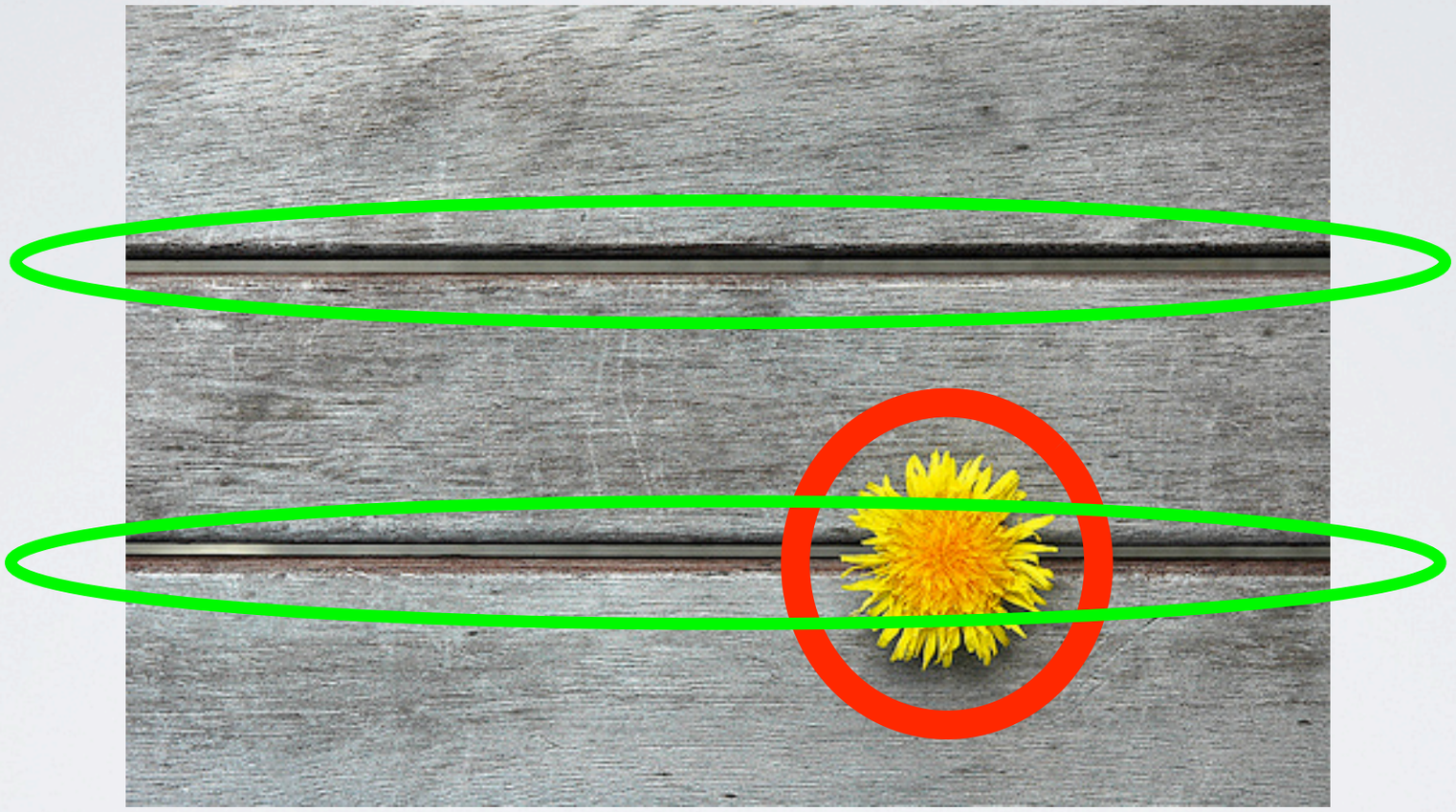


Power Points

How it works.



How it works.



How it works.

- Calculate object distances from **power points**.
- Calculate line distances from **power lines**, with emphasis on horizontal, then vertical, and finally diagonal.

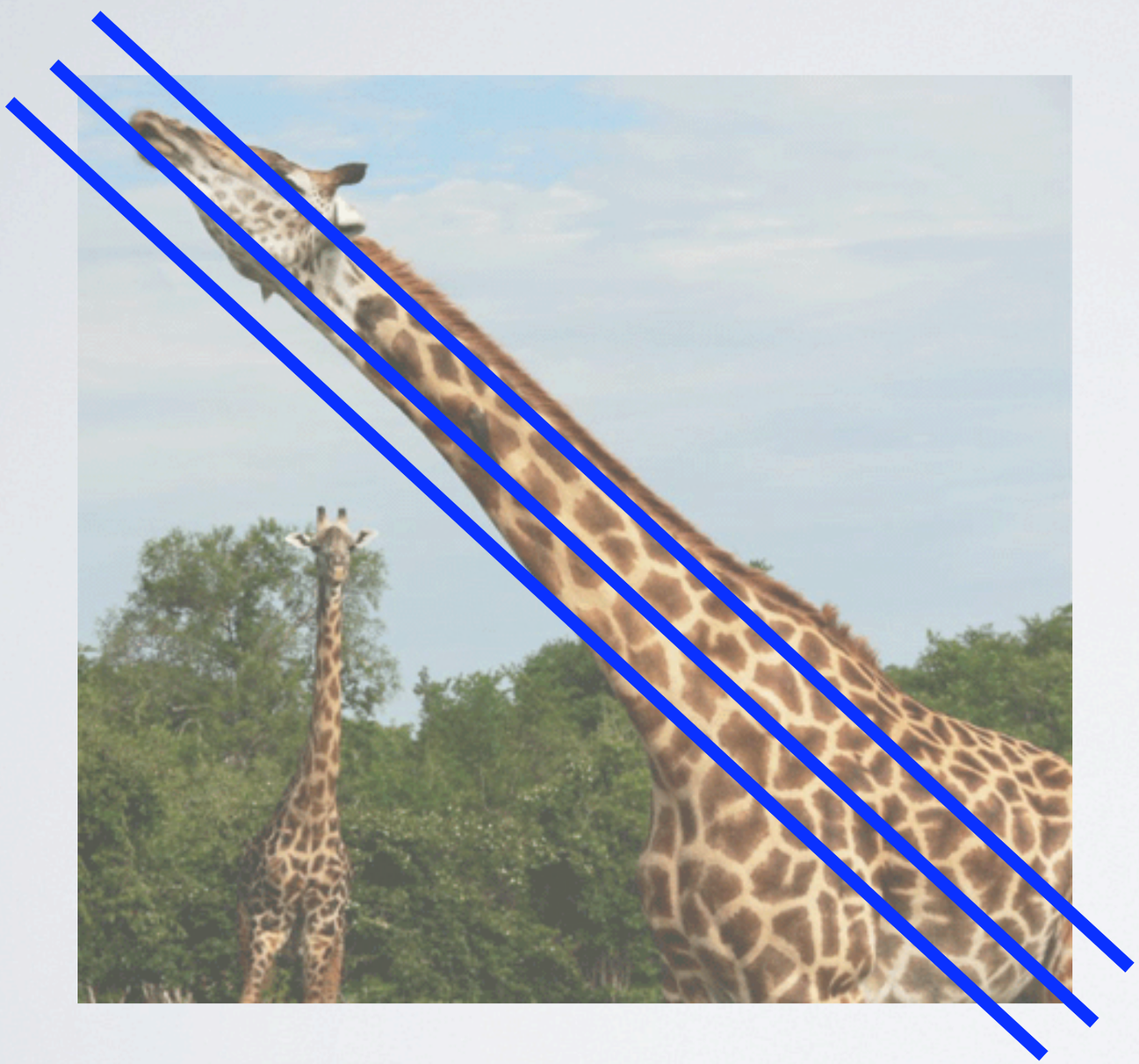
How it works.

- Also need to know **salience** (visual importance) of line or object.

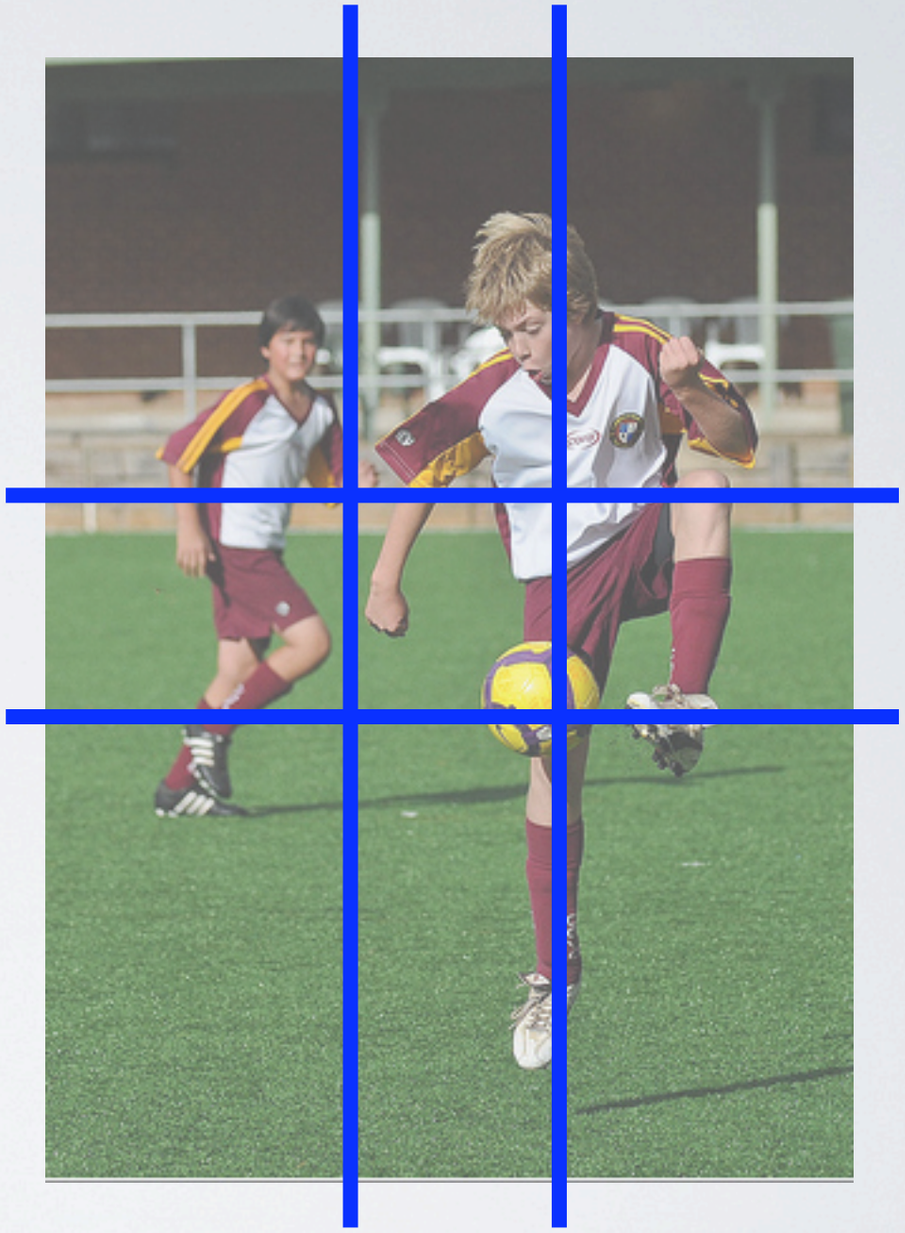
How it works.

- Simplified: Sum up the best distances weighted by salience for different features and get a score.
- Weigh each feature score to get a total score (e.g. 50% lines and 50% objects, then 75% rule of thirds, 25% diagonal rule).

It gets more complicated.



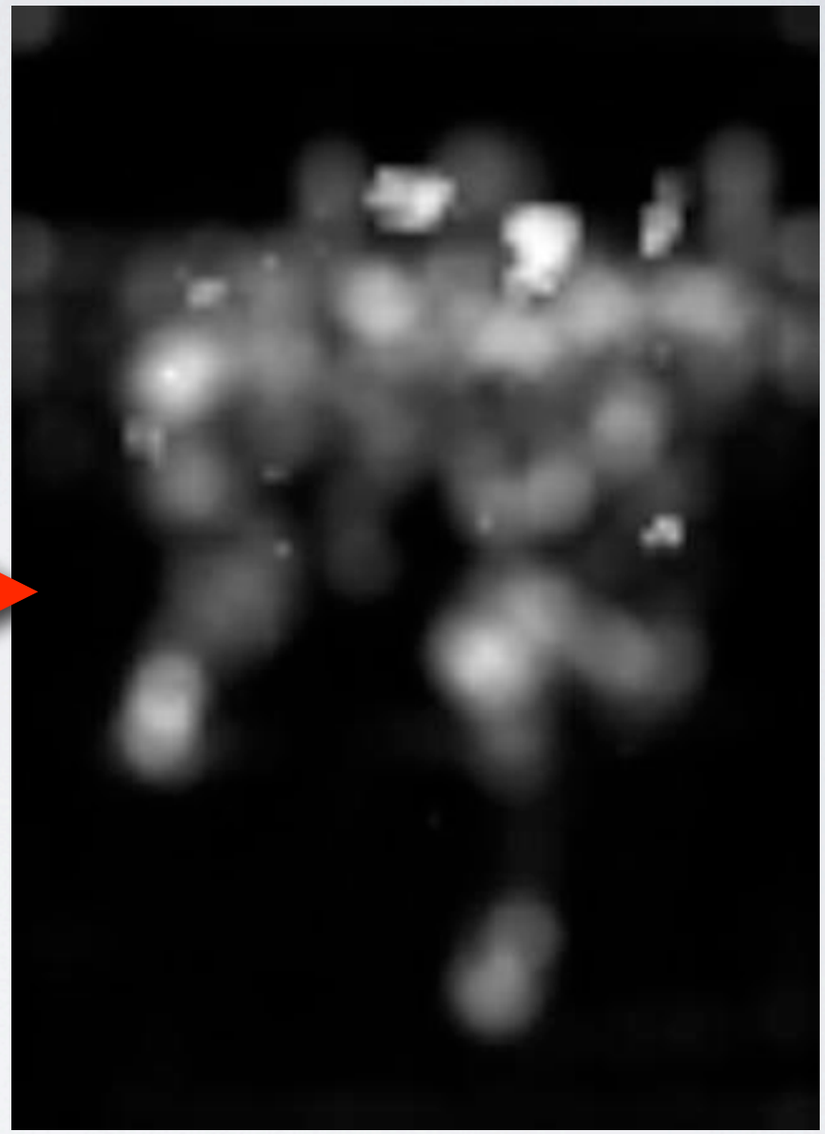
Diagonal Rule



Golden Mean/Section...

Original Image

Saliency Map



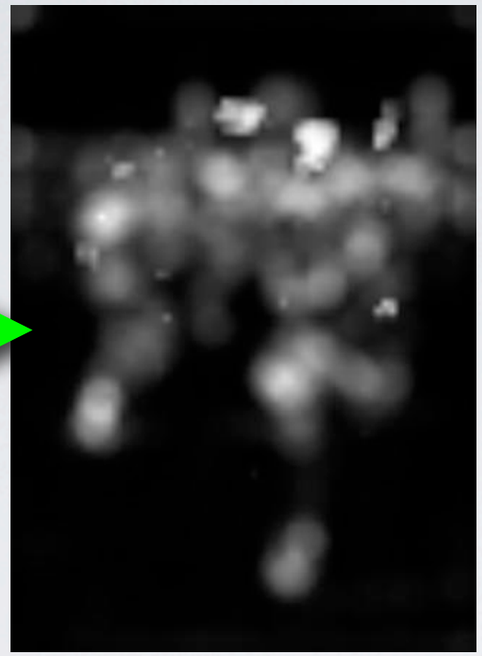
spectral residual
(Hou and Zhang)

+

face detection
(Gabor features, neural network - Sakhi)

Original Image

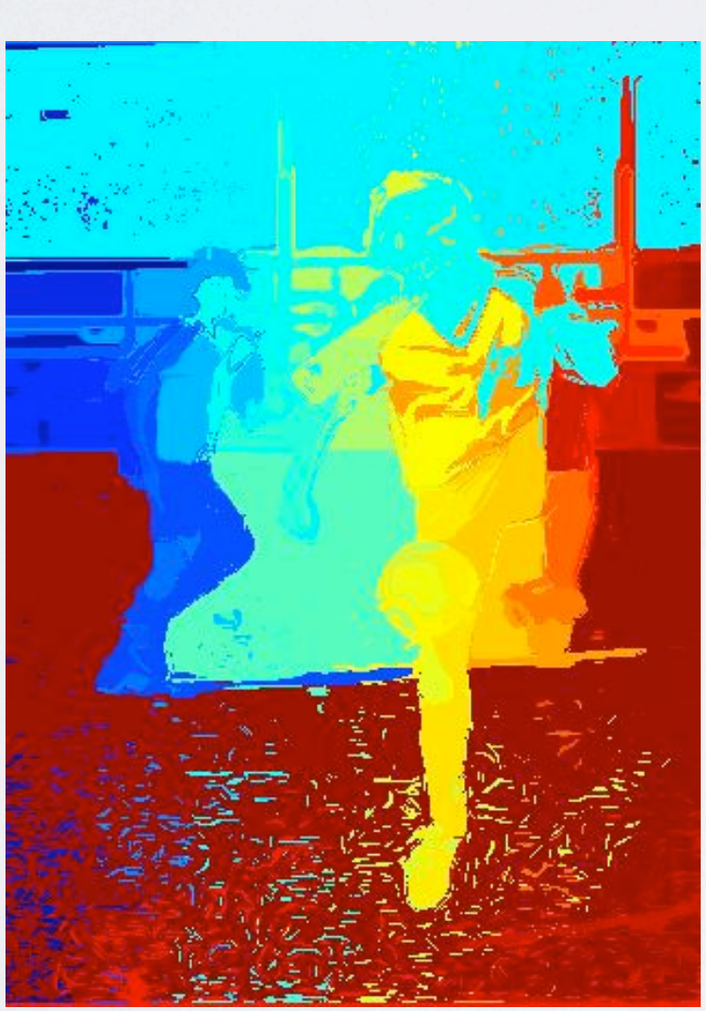
Saliency Map



Salient Regions

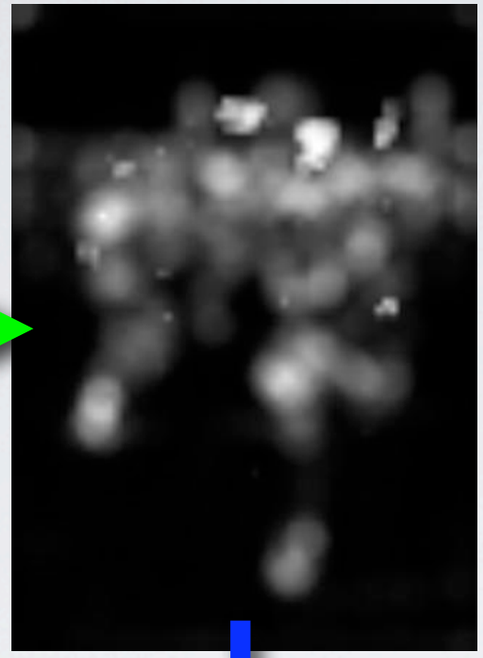
Efficient Graph-Based Image Segmentation

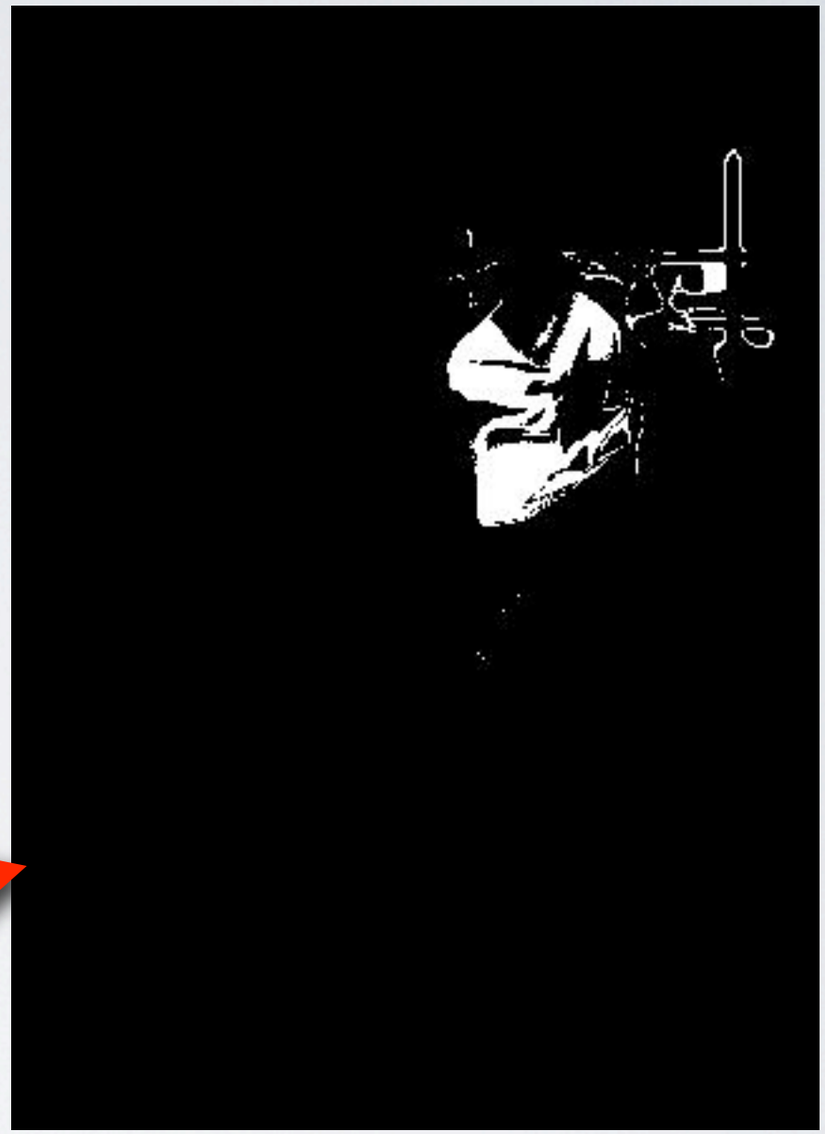
(Felzenszwalb and Huttenlocher)



Original Image

Saliency Map





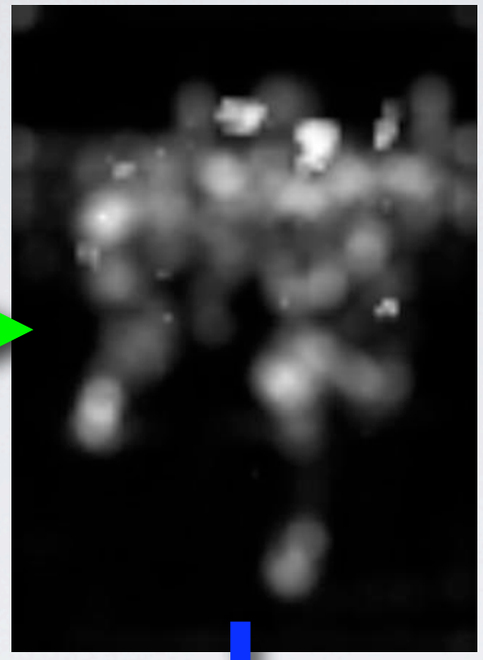
Object 1

Efficient Graph-Based Image Segmentation

Salient Regions

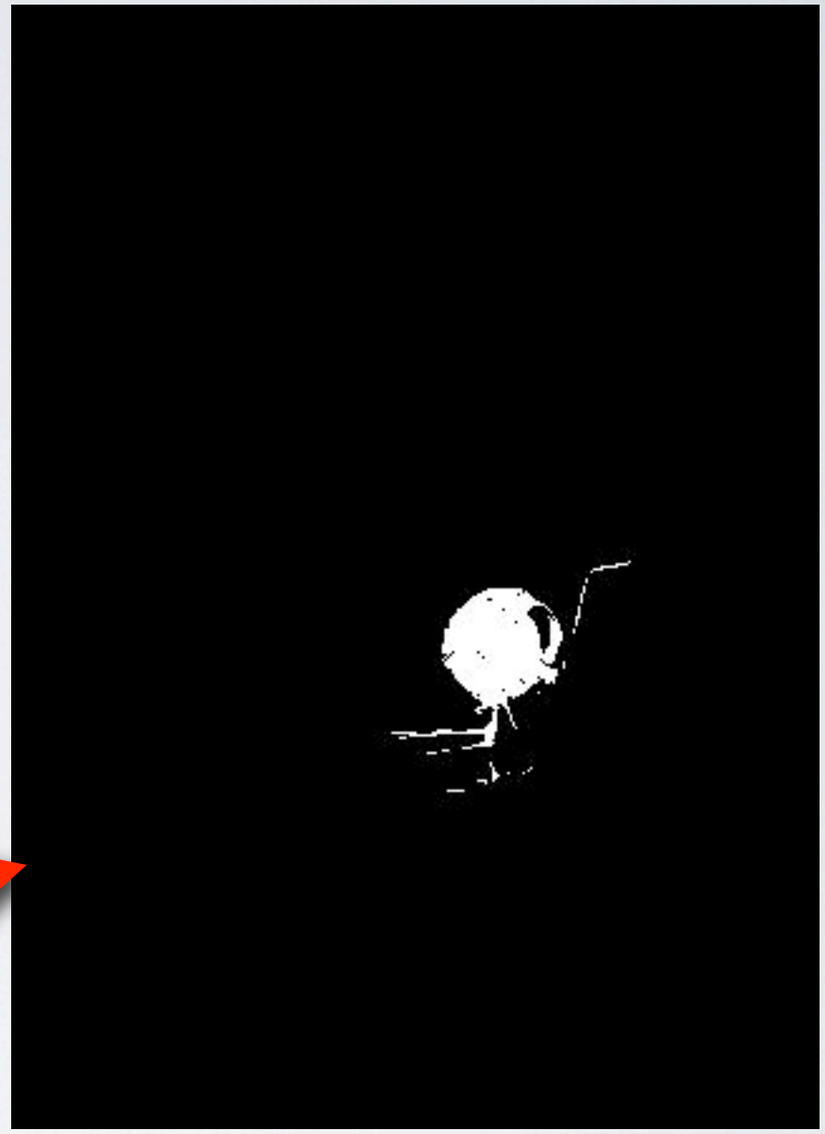
Original Image

Saliency Map



Efficient Graph-Based Image Segmentation

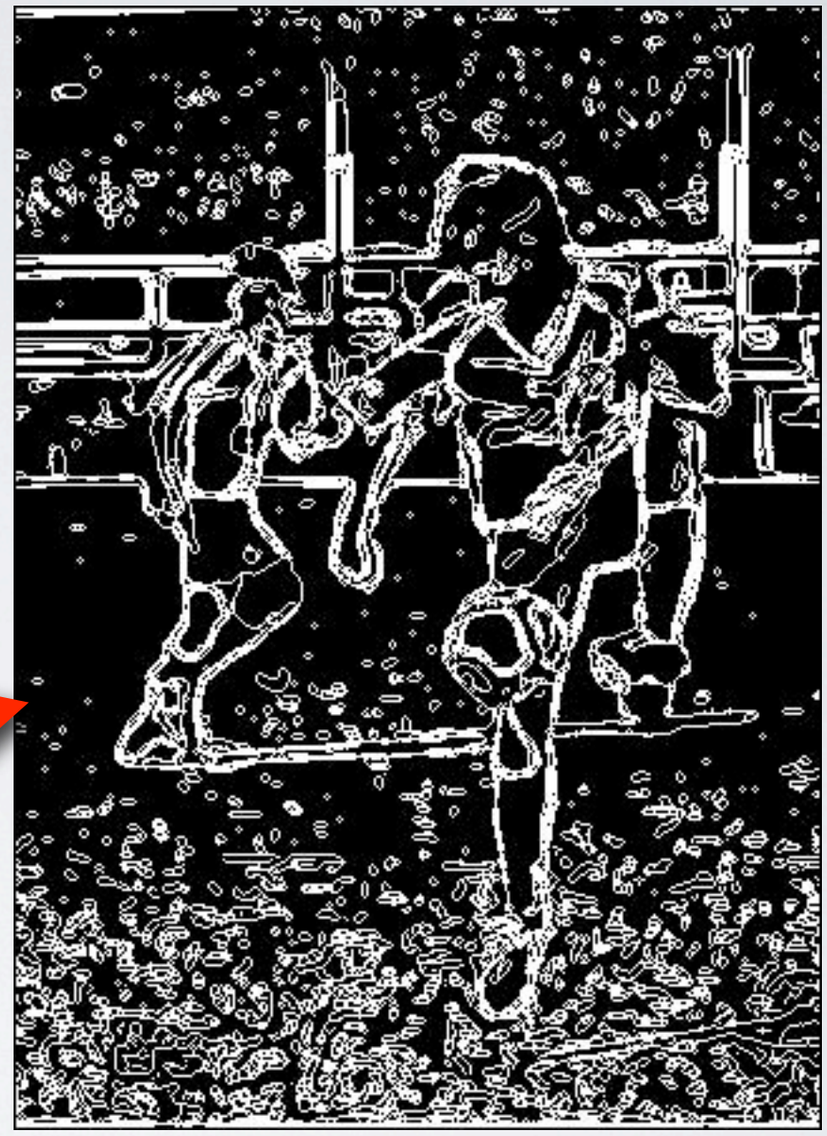
Salient Regions



Object 2

Original Image

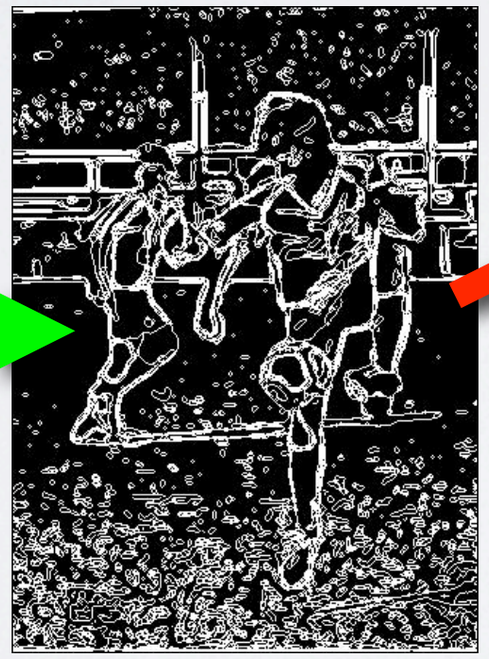
Efficient Graph-Based Image Segmentation



Outline Image Segments

Original Image

Efficient Graph-Based Image Segmentation

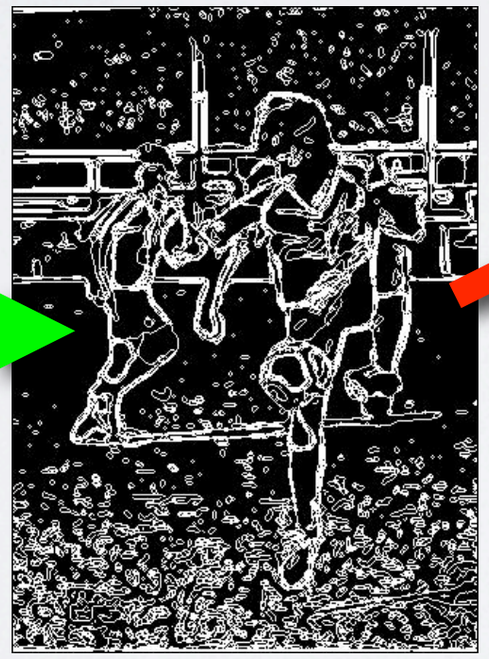


Outline Image Segments

Line 1, horizontal

Original Image

Efficient Graph-Based Image Segmentation

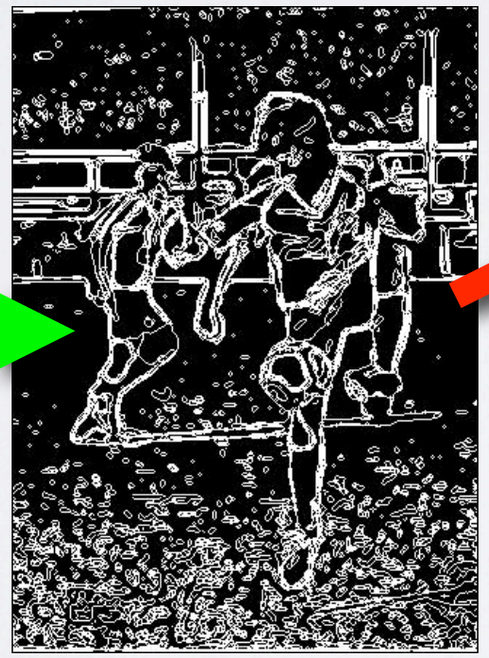


Outline Image Segments

Line 2, vertical

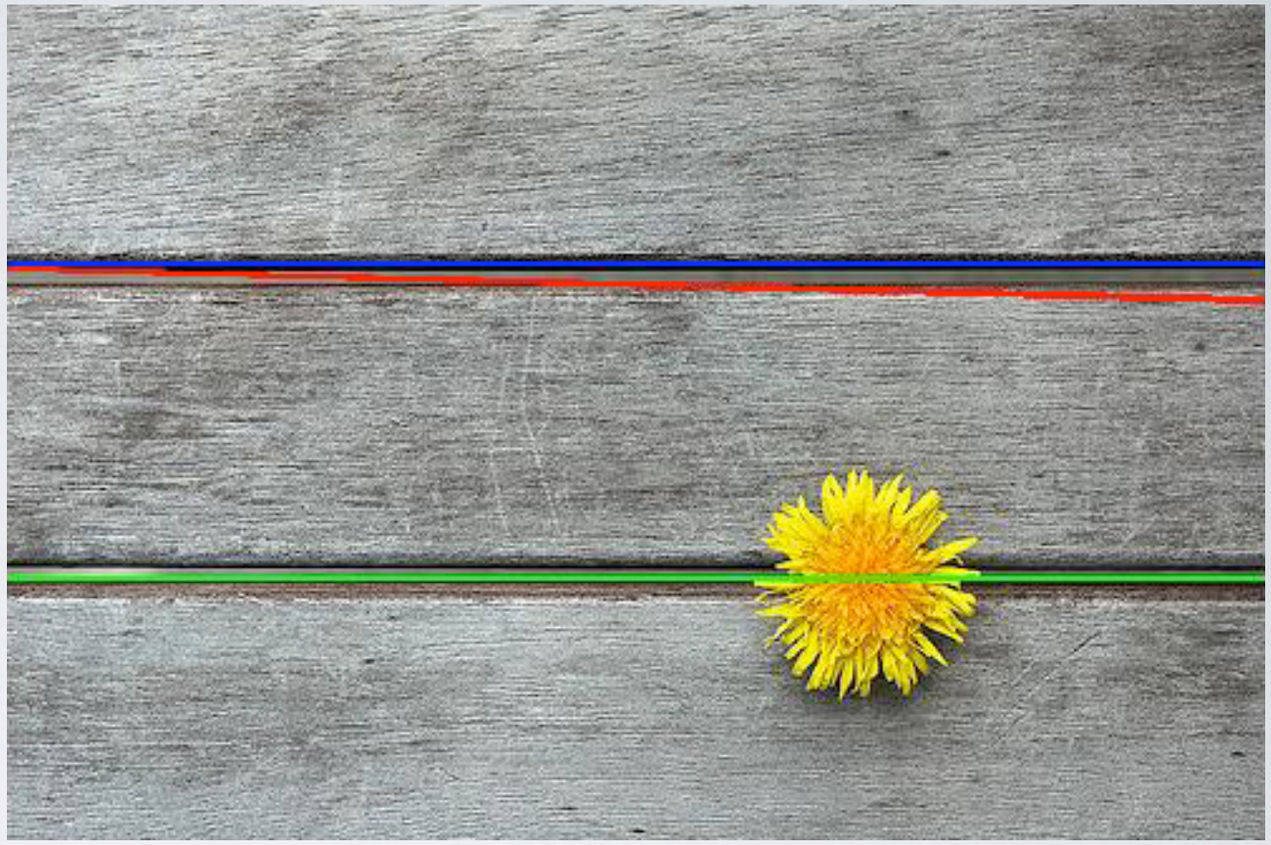
Original Image

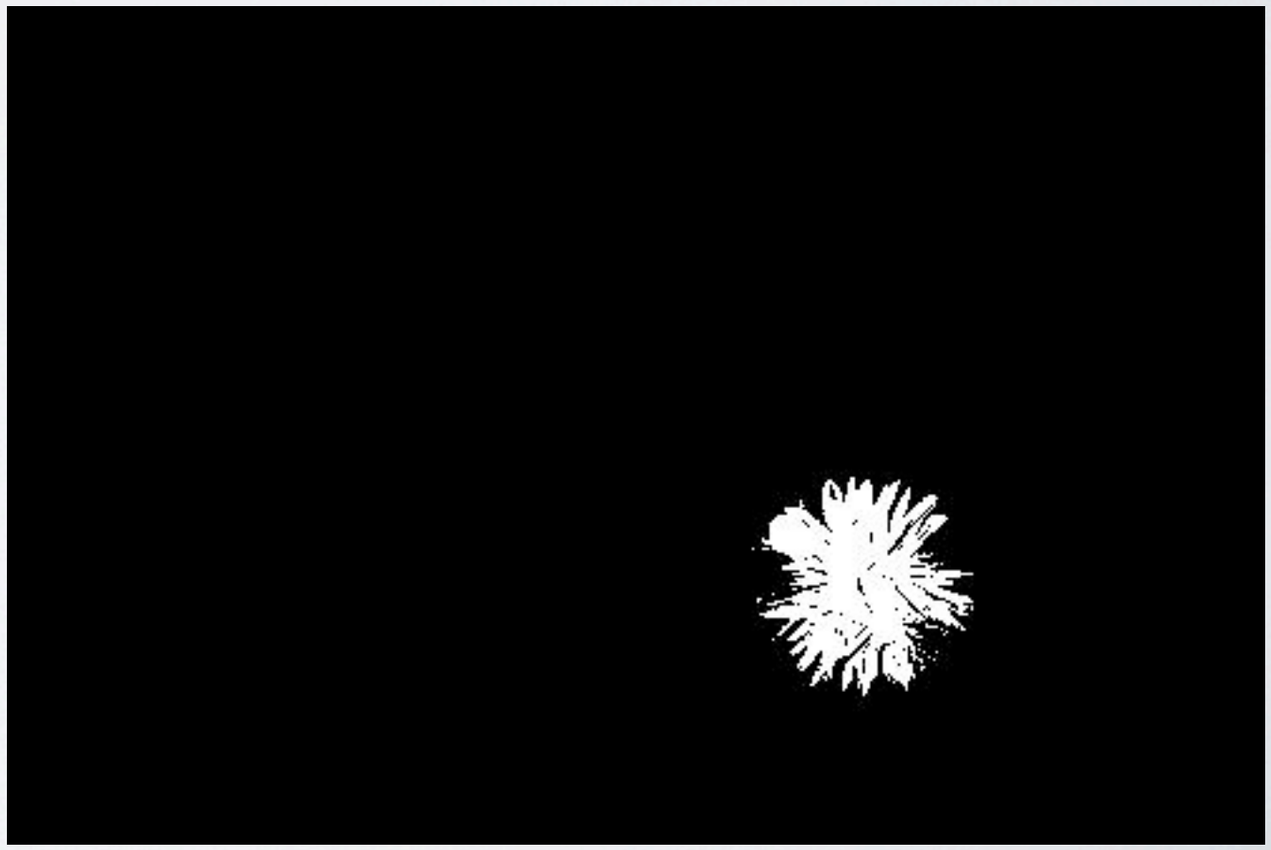
Efficient Graph-Based Image Segmentation



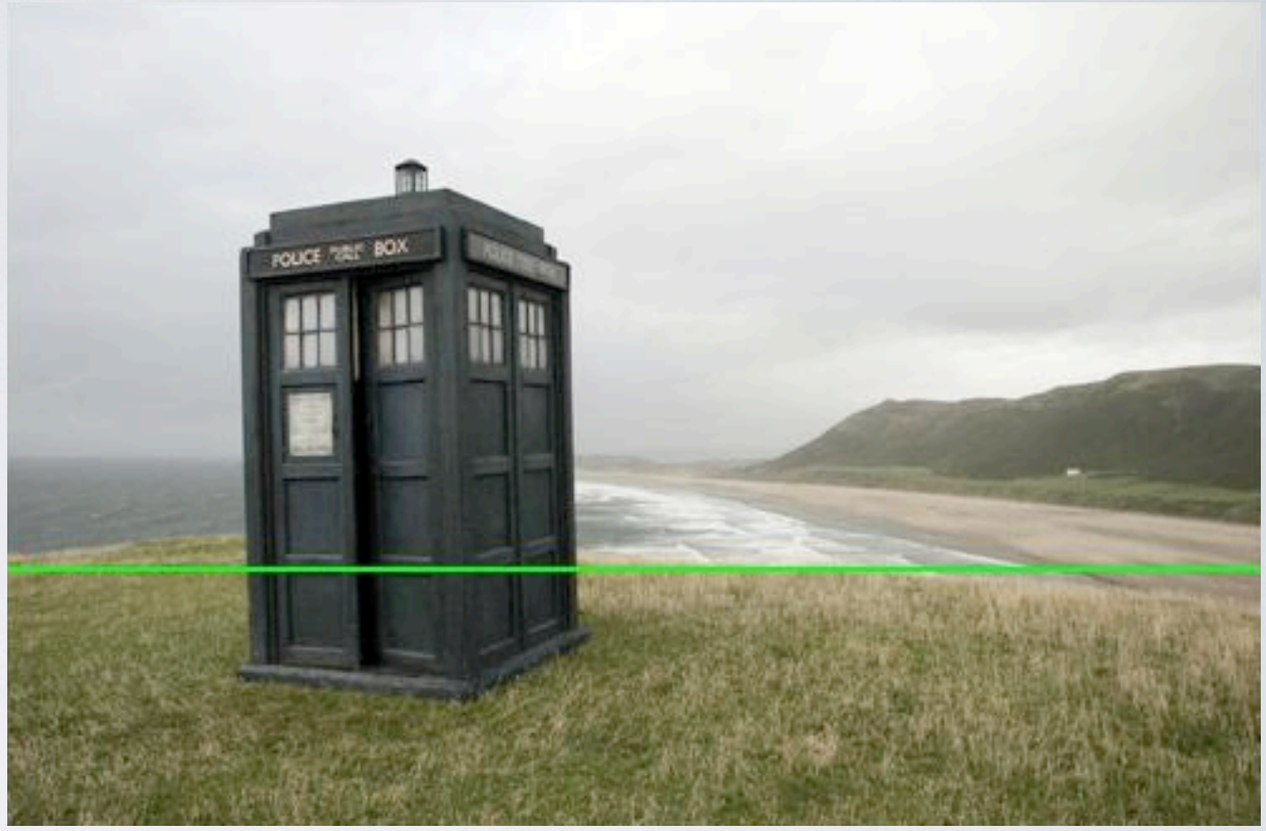
Outline Image Segments

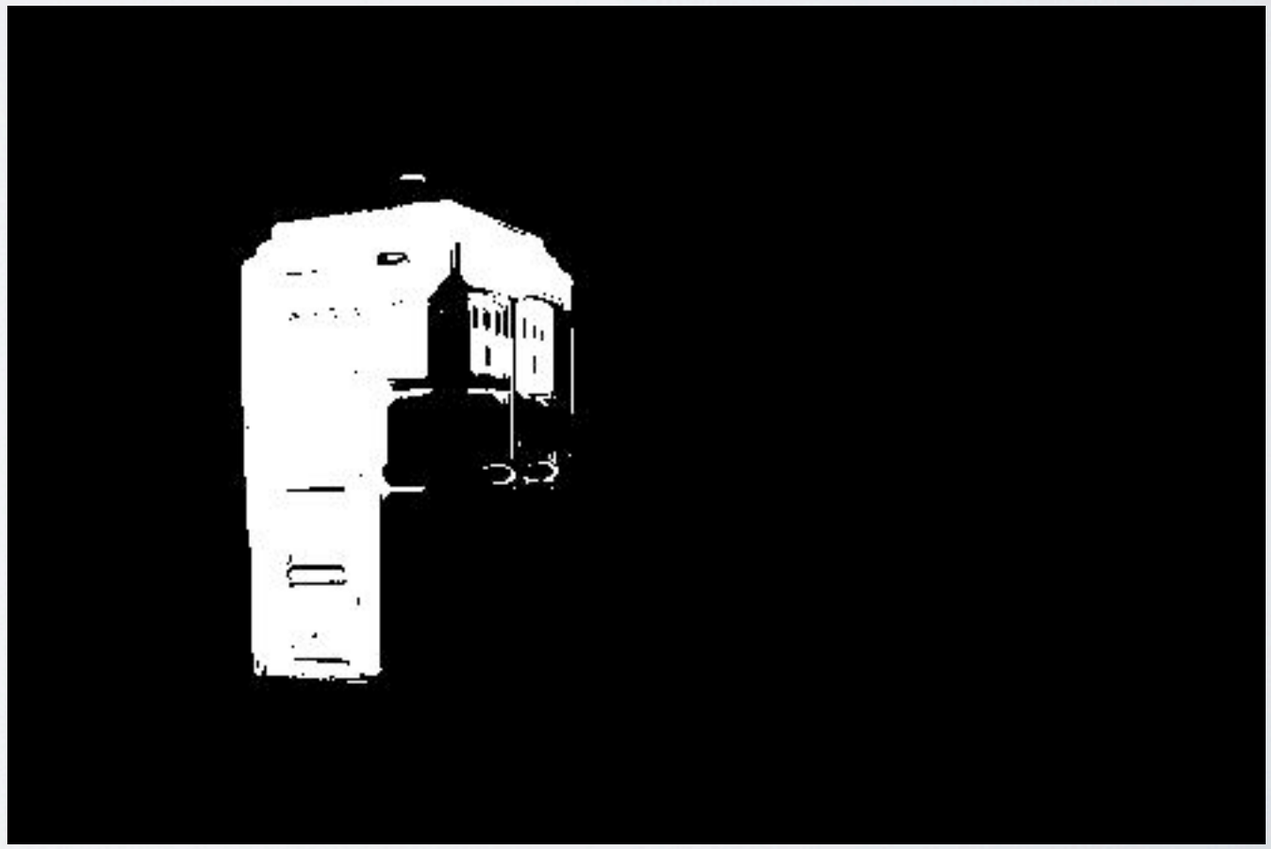
Line 3, passing through object





POLICE PUBLIC BOX


POLICE PUBLIC BOX



Some scores on Rule of Thirds.

0.7818

0.9398

0.7176

0.2107

0.526

0.5487

Crop to find best ‘aesthetic’ scores.

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