

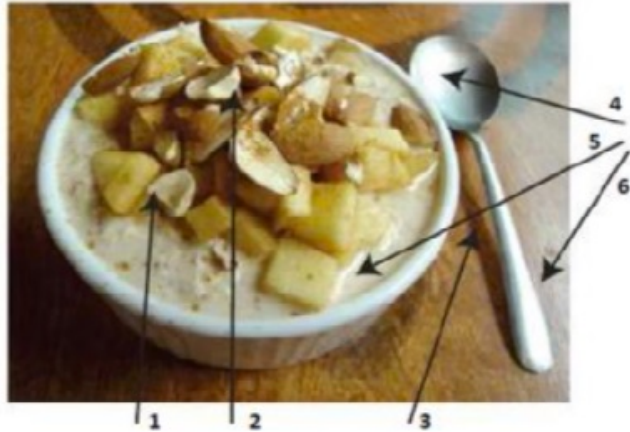
1. Write down a 3x3 filter that returns a positive value if the average value of the 4-adjacent neighbors is less than the center and a negative value otherwise

Homework

Select one of these two:

- Construct Gaussian, laplacian, wavelet and steerable pyramid from one 256-by-256 image
- Make a blended image using your own photos.

Take-home questions



- A. For each of the arrows in the above image, name the reasons the pixel near the end of the arrow has its brightness value and explain very briefly. The arrow pointing to milk is pointing to the thin bright line at the edge of the piece of apple; the arrow pointing to the spoon handle is pointing to the bright area on the handle.

Possible factors: albedo, shadows, texture, specularities, curvature, lighting direction

Take-home questions



1. Lighting

- A. Answer the following regarding the above image (photo credit: ColinBrough from RGBStock.com).
1. In what direction is the dominant light source: left and above, directly above, or right and above?
 2. Why is one of the temple tips (the part that rests on the ear) so bright, considering that the other tip which has the same material is very dark?
 3. What causes the dark streaks in the wood (in terms of shape, albedo, reflectance, etc.)?
 4. If the table were completely specular, would the glasses cast a shadow on it (explain why or why not)?



How tall is this woman?

How high is the camera?

What is the camera rotation?

What is the focal length of the camera?

Which ball is closer?

Homework 3

Provide a set of images and obtain the intrinsic and extrinsic camera parameters