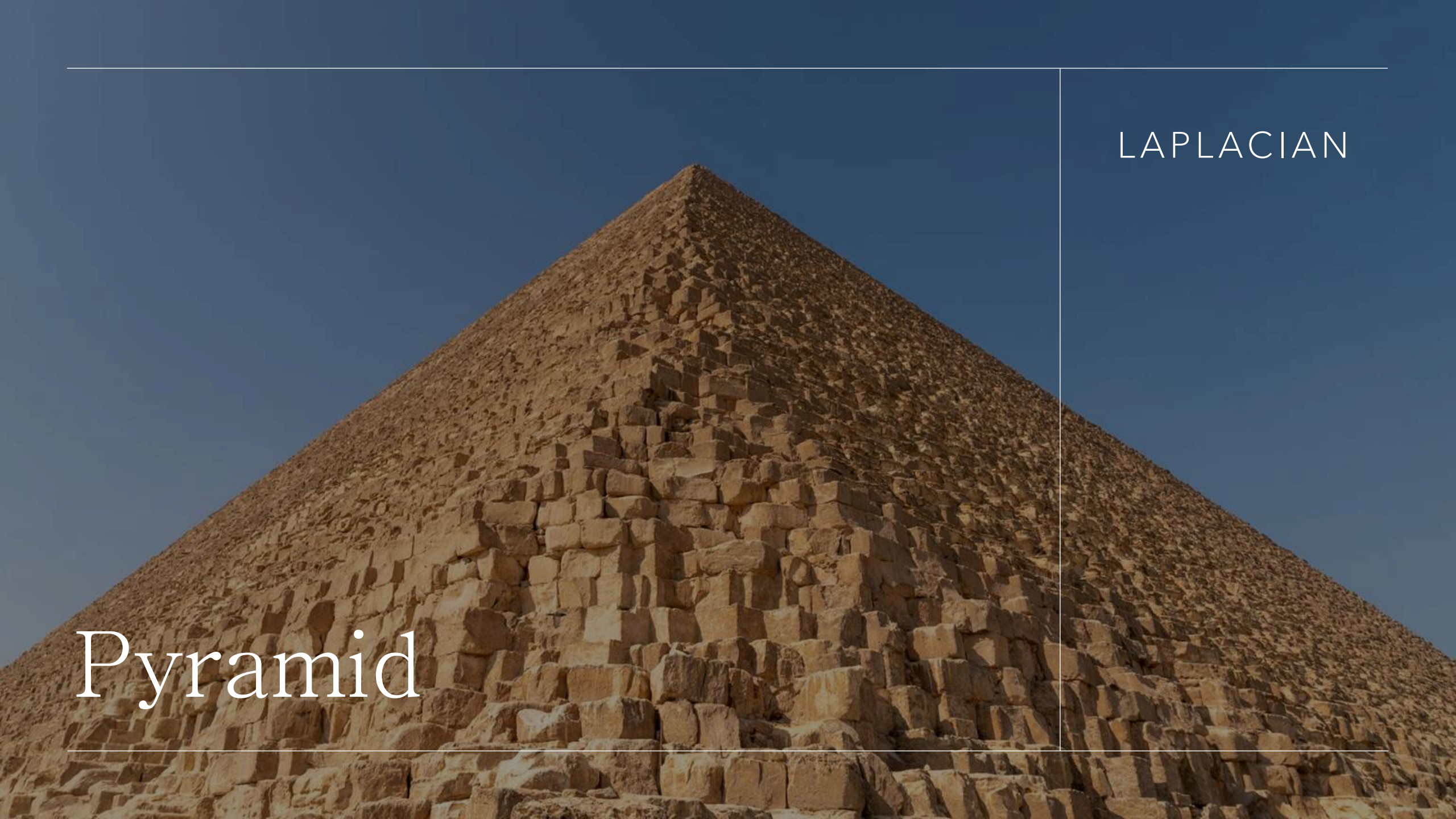


LAPLACIAN

Pyramid

Laplacian Pyramid

$$L_1 = g_1 - \text{EXPAND}[g_2]$$

$$L_2 = g_2 - \text{EXPAND}[g_3]$$

$$\vdots$$

Coding using Laplacian Pyramid

- Compute Gaussian Pyramid

$$g_1, g_2, g_3, g_4 \ldots$$

- Compute Laplacian Pyramid

$$L_1 = g_1 - \text{EXPAND}[g_2]$$

$$L_2 = g_2 - \text{EXPAND}[g_3]$$

$$L_3 = g_3 - \text{EXPAND}[g_4]$$

$$L_4 = g_4$$

- Code Laplacian Pyramid

Decoding using Laplacian Pyramid

- Decode Laplacian Pyramid
- Compute Gaussian Pyramid

$$g_4 = L_4$$

$$g_3 = \text{EXPAND}[g_4] + L_3$$

$$g_2 = \text{EXPAND}[g_3] + L_2$$

$$g_1 = \text{EXPAND}[g_2] + L_1$$

- g1 is reconstructed image

Laplacian Pyramid

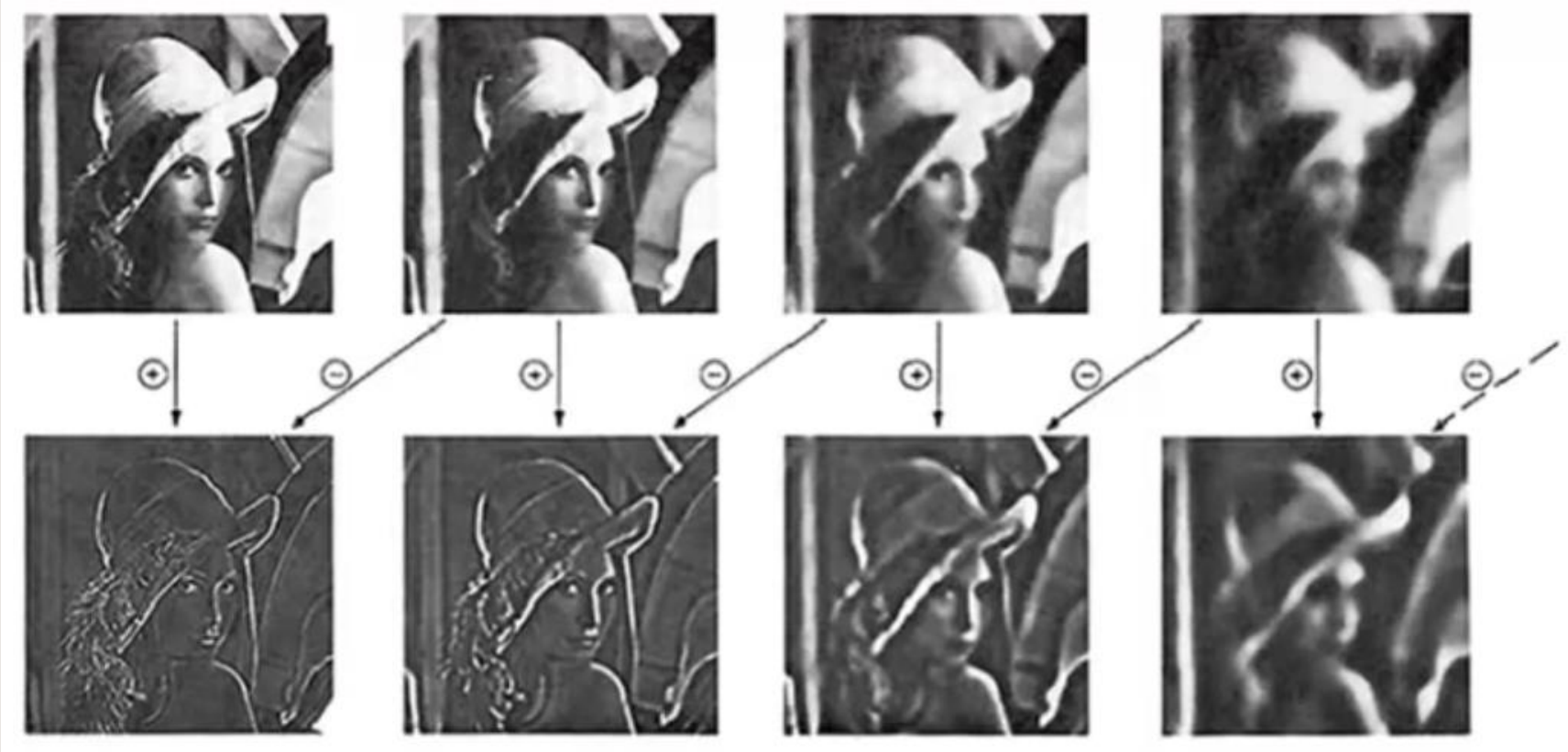
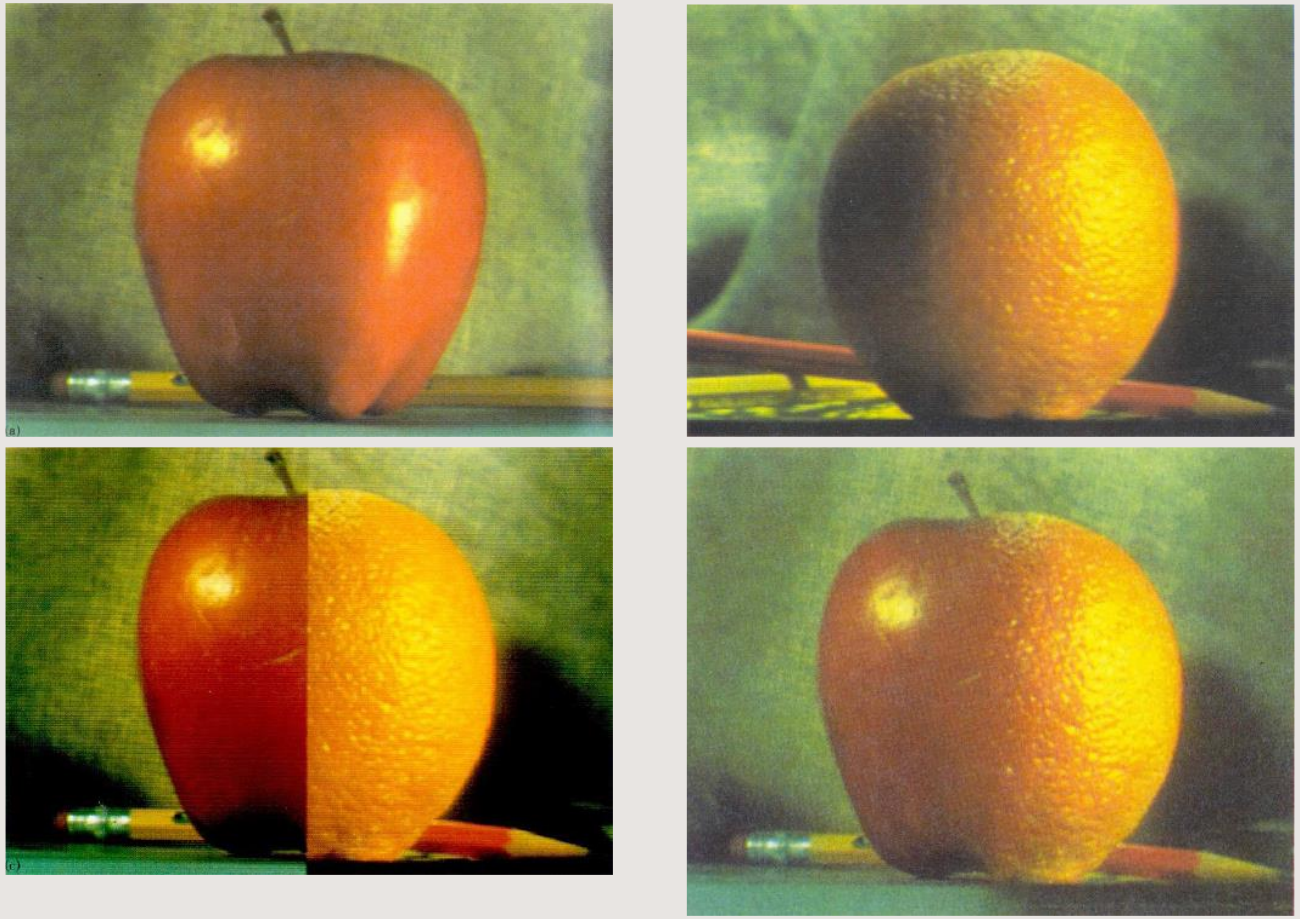
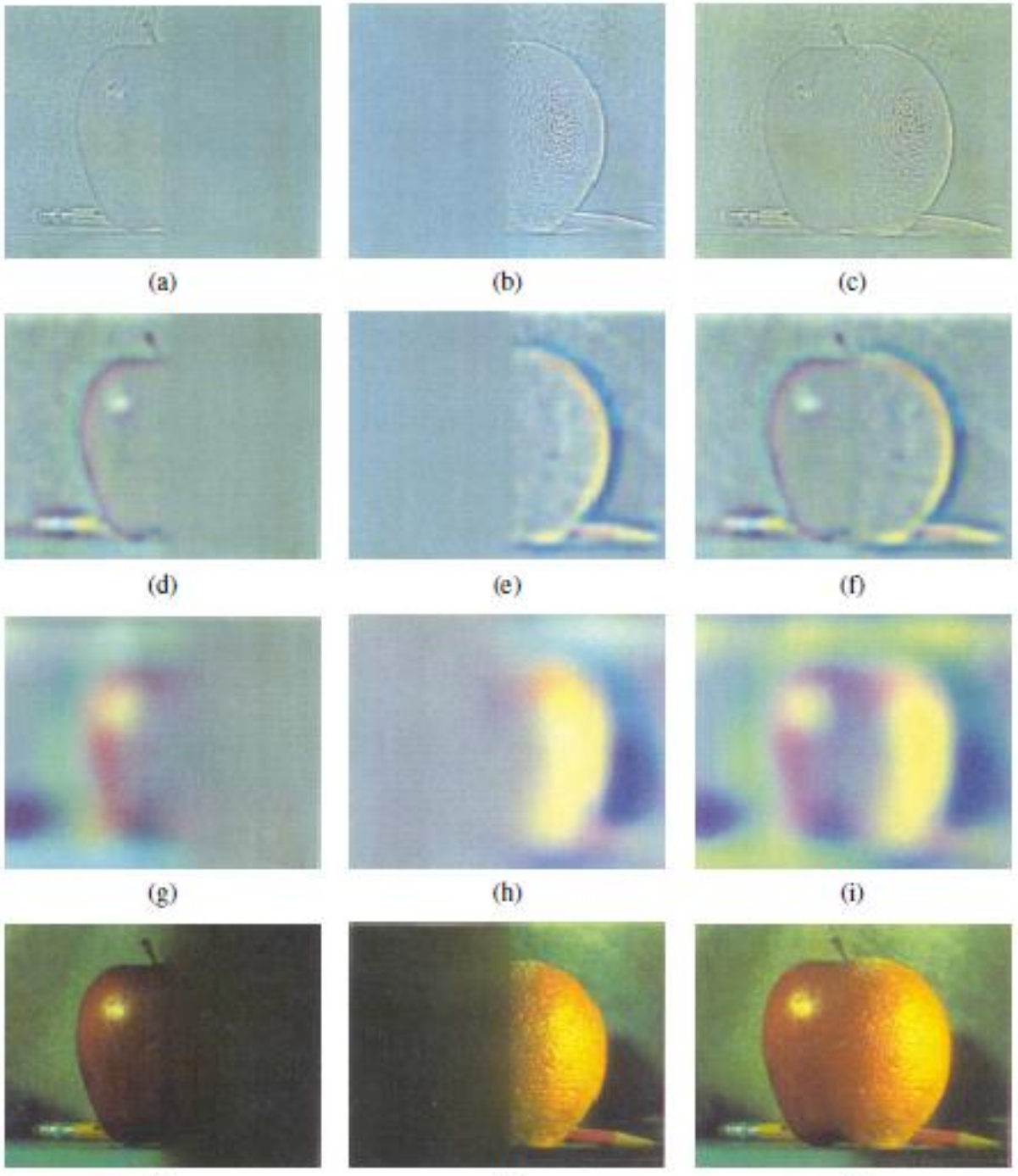


Image Blending



Algorithm

- Generate Laplacian pyramid of Orange image
- Generate Laplacian pyramid of Apple image
- Generate Laplacian pyramid of combined image
  - Copy left half of the nodes at each level from Apple image
  - Copy right half of the nodes at each level from Orange image
  - Apply weightage (average) function on the centre pixels
- Reconstruct combined image by converting Laplacian into Gaussian pyramid



(a) (b) (c)

(d) (e) (f)

(g) (h) (i)

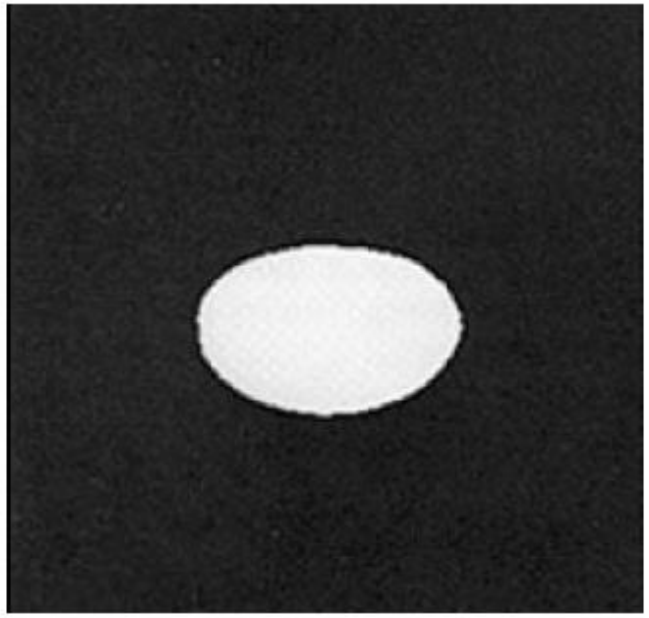
(j) (k) (l)

Laplacian Pyramid application (fun)

- https://www.youtube.com/watch?v=6OfZD5xB6TA&ab_channel=IndustriaMovies

(a)

(b)



(c)

(d)