

Another practical application of image segmentation is content-based image retrieval. Content-based image retrieval, is the application of computer vision techniques to the image retrieval problem, that is, the problem of searching for digital images in large databases. "Content-based" means that the search analyzes the contents of the image rather than the metadata such as keywords, tags, or descriptions associated with the image. The term "content" in this context might refer to colors, shapes, textures, or any other information that can be derived from the image itself. CBIR is desirable because searches that rely purely on metadata are dependent on annotation quality and completeness.

Other practical applications include (but are not limited to):

Machine vision

Medical imaging, including volume rendered images from computed tomography and magnetic resonance imaging.

- Locate tumors and other pathologies
- Measure tissue volumes
- Diagnosis, study of anatomical structure
- Surgery planning
- Virtual surgery simulation
- Intra-surgery navigation

Object detection

- Pedestrian detection
- Face detection
- Brake light detection
- Locate objects in satellite images (roads, forests, crops, etc.)

Recognition Tasks

- Face recognition
- Fingerprint recognition
- Iris recognition

Traffic control systems

Video surveillance

Video object co-segmentation and action localization

سوال دوم

Original Image

0	0	0	0	0	0	0	0	0	0
0	1	0	1	0	0	1	1	1	0
0	1	0	0	1	1	0	0	1	0
0	0	0	0	0	0	0	1	1	0
0	0	1	0	0	0	1	1	1	0
0	0	0	1	0	0	0	1	0	0
0	0	1	1	0	1	0	0	0	0
0	0	0	0	0	1	0	0	0	0
0	0	0	0	1	0	1	0	0	0
0	0	0	0	0	0	0	0	0	0

Dilation

0	0	0	0	0	0	0	0	0	0
0	1	1	1	1	1	1	1	1	0
0	1	1	1	1	1	1	1	1	0
0	1	1	0	1	1	1	1	1	0
0	1	1	1	0	1	1	1	1	0
0	0	1	1	1	1	1	1	1	0
0	1	1	1	1	1	1	1	0	0
0	0	1	1	1	1	1	0	0	0
0	0	0	1	1	1	1	1	0	0
0	0	0	0	0	0	0	0	0	0

Erosion

0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	1	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0

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As expected, my implementation took a lot more time, but resulted with the same output. But because the number of iterations and the kernel are the same, the result doesn't vary.