

A little about myself

- My name is Michael Borghese.
- I am from Los Angeles, CA. Bachelors from UCLA. Masters from Cal State-Long Beach
- I was always fascinated by mathematics, but I was also quite interested in other fields like psychology, medicine, economics, engineering. Thus applied math.
- Currently, I plan to pursue a career in academia.
- I have previously done research in image processing. Though I now have begin to research other topics as well.

What is contained in a digital image?



If we zoom in...

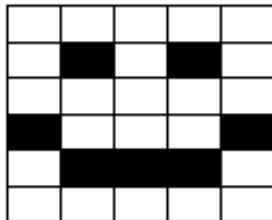


Each pixel has a constant intensity.

Arrays into images

A rectangular array of numbers between 0 and 1 can be converted into an image and vice versa

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



Why is segmentation a problem?

To a human observer, there is an obvious object contained in the image.



To the computer, the image is just an array of numbers. None of the pixels are necessarily more important.

Why not just focus on certain values?

Since the numbers contained in the array represent the intensity of the pixels, a simple solution might be to have the computer focus on specific pixel values.



Figure: Threshold of values > 0.3

How to get the computer to recognize an object is there.

The goal is to use an algorithm to get the computer to separate the object from the background.



The more automated the process, the better.