Week 6 - Starting with Semantic Segmentation

- ***Till now, we are done with the basic concepts of Deep Learning and Image Processing***

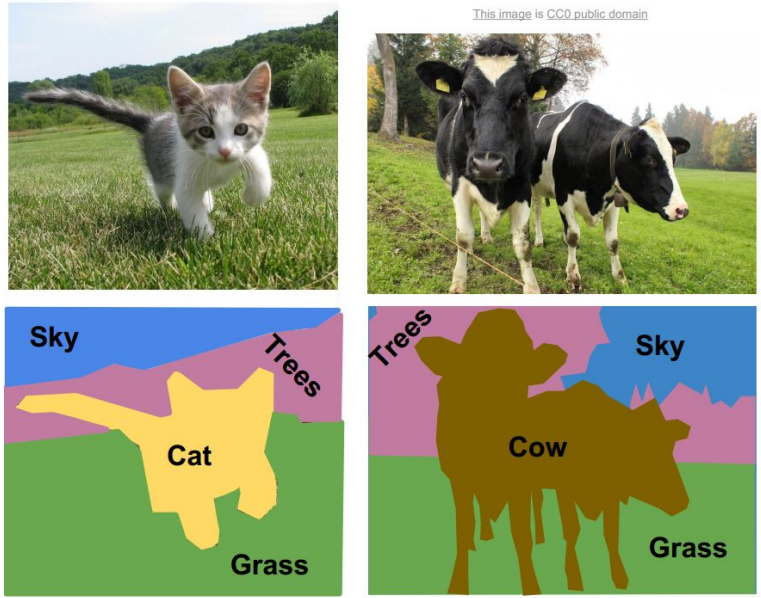
Now, we will learn about -

- Semantic Segmentation
- Transpose Convolution

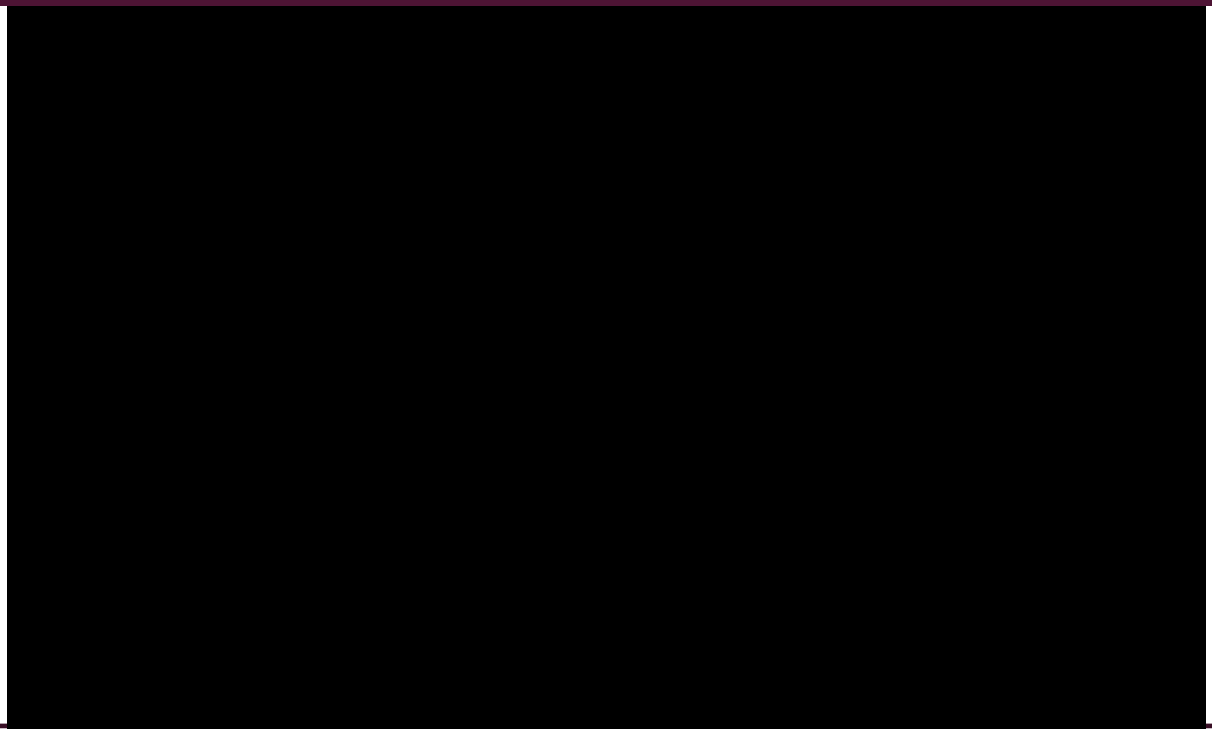
What we will be doing in this week?

This week, you will learn how you can use Semantic Segmentation to drive your Lunar Rover for Exploration.

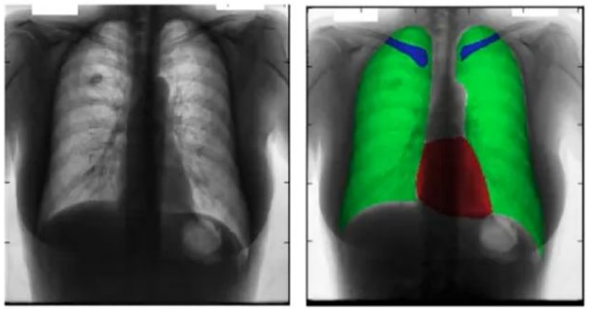
IMAGE SEGMENTATION



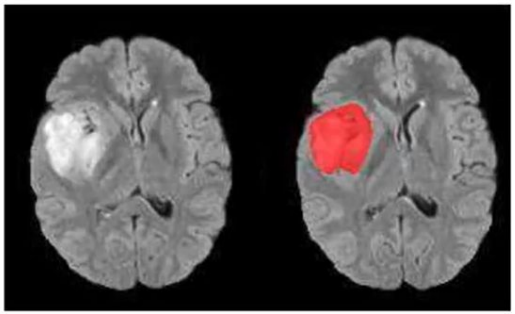
For Autonomous Driving



APPLICATIONS OF IMAGE SEGMENTATION



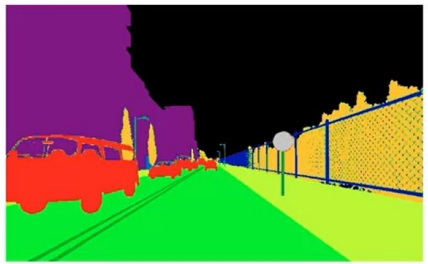
Chest X-Ray



Brain MRI

APPLICATIONS OF IMAGE SEGMENTATION

Input image



Semantic Segmentation

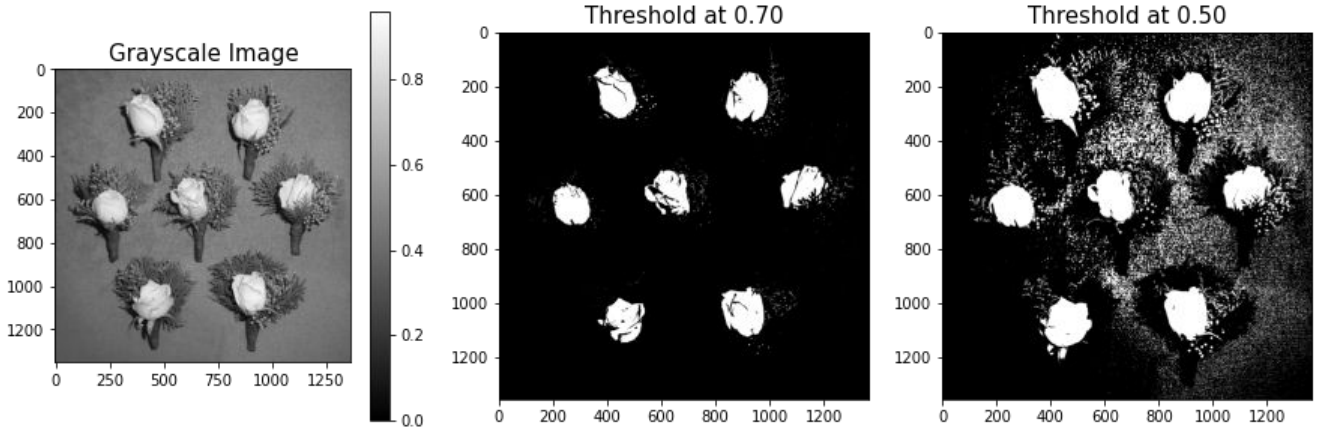
TYPES OF SEGMENTATION

- Semantic Image Segmentation
- Instance Image Segmentation
- Thresholding Image Segmentation
- Edge Based Segmentation
- Watershed Segmentation

SEMANTIC SEGMENTATION

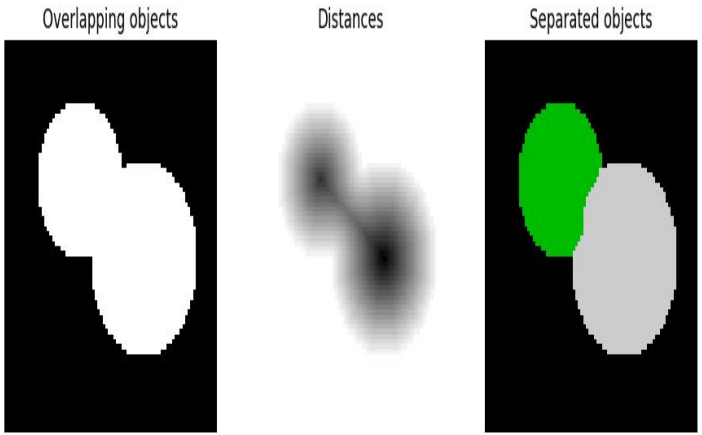
INSTANCE SEGMENTATION

THRESHOLD SEGMENTATION



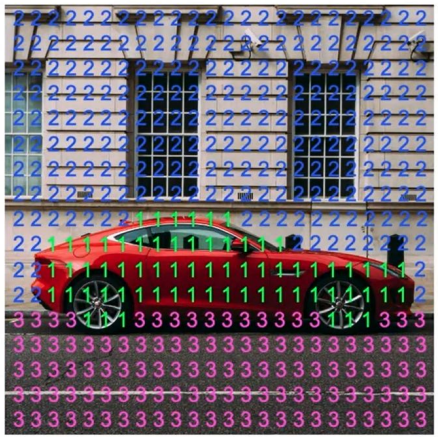
EDGE BASED SEGMENTATION

WATERSHED SEGMENTATION

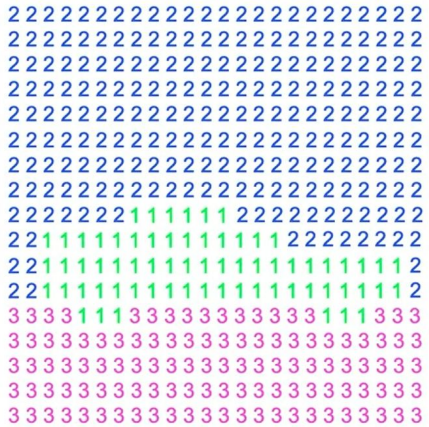


EXAMPLE SEMANTIC SEGMENTATION

Per-pixel class labels

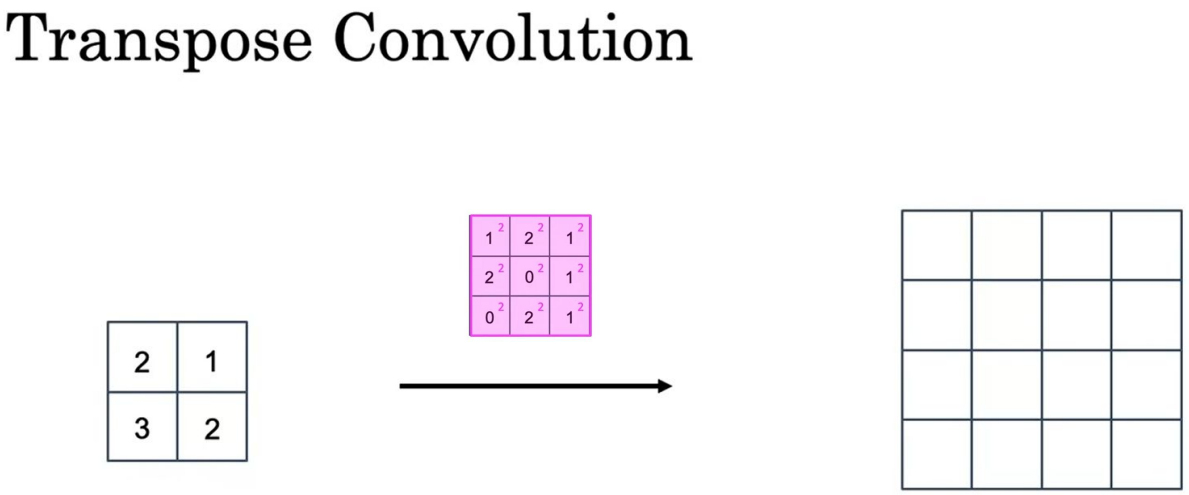


1. Car
2. Building
3. Road



Segmentation Map

TRANSPOSE CONVOLUTION



TRANSPOSE CONVOLUTION

Moving on to our Jupyter Notebook to understand more about Transpose Convolution