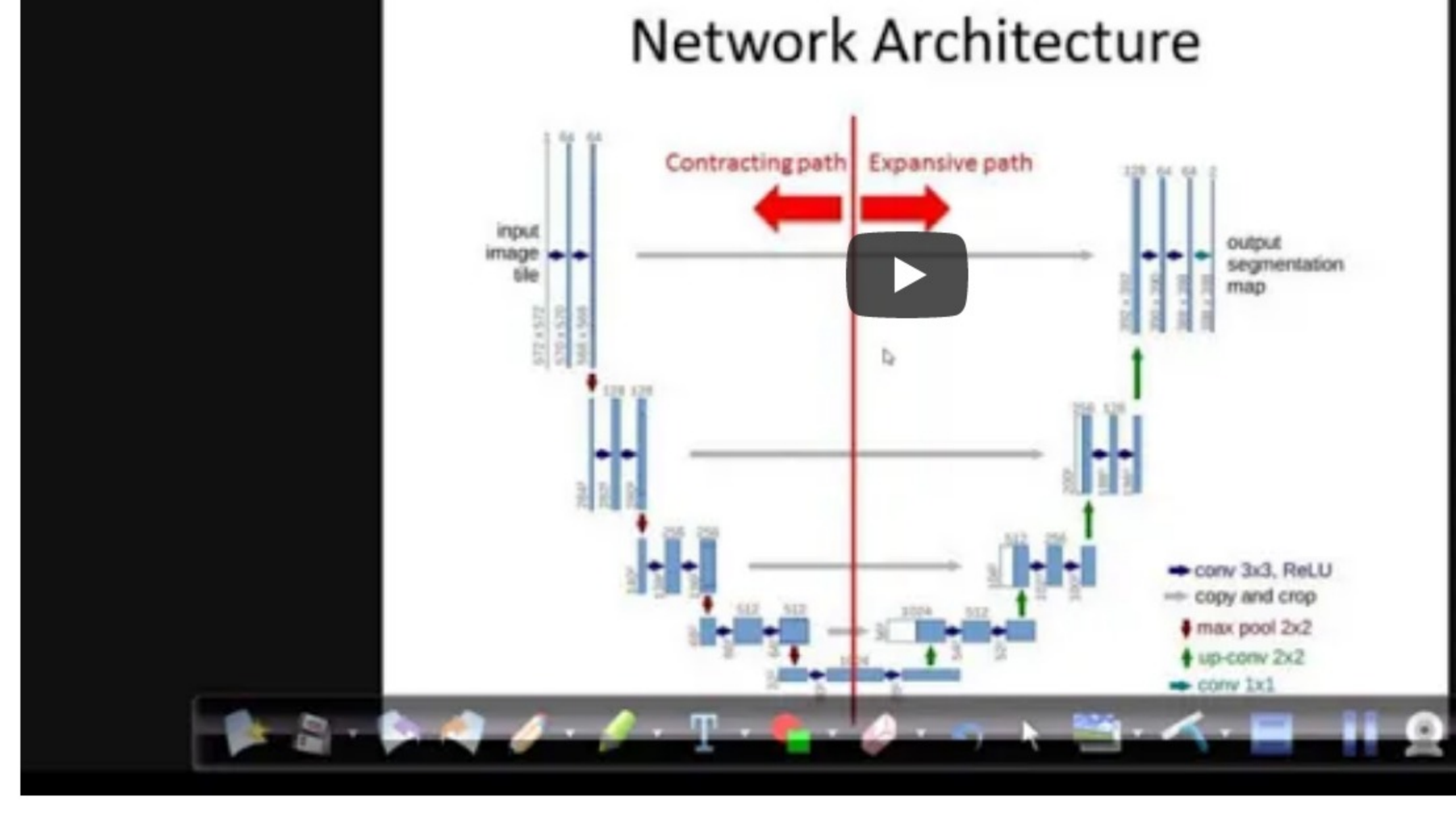
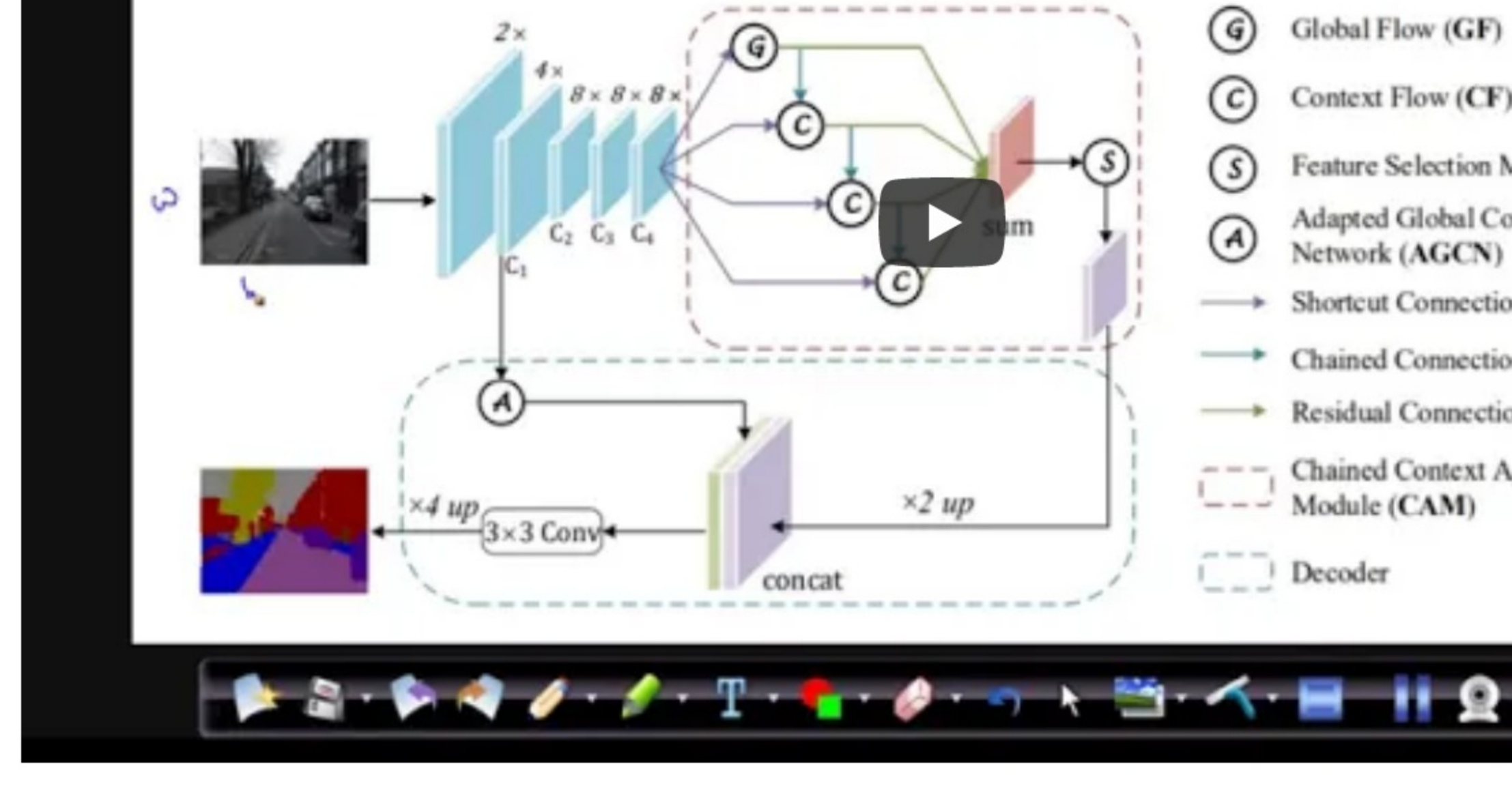
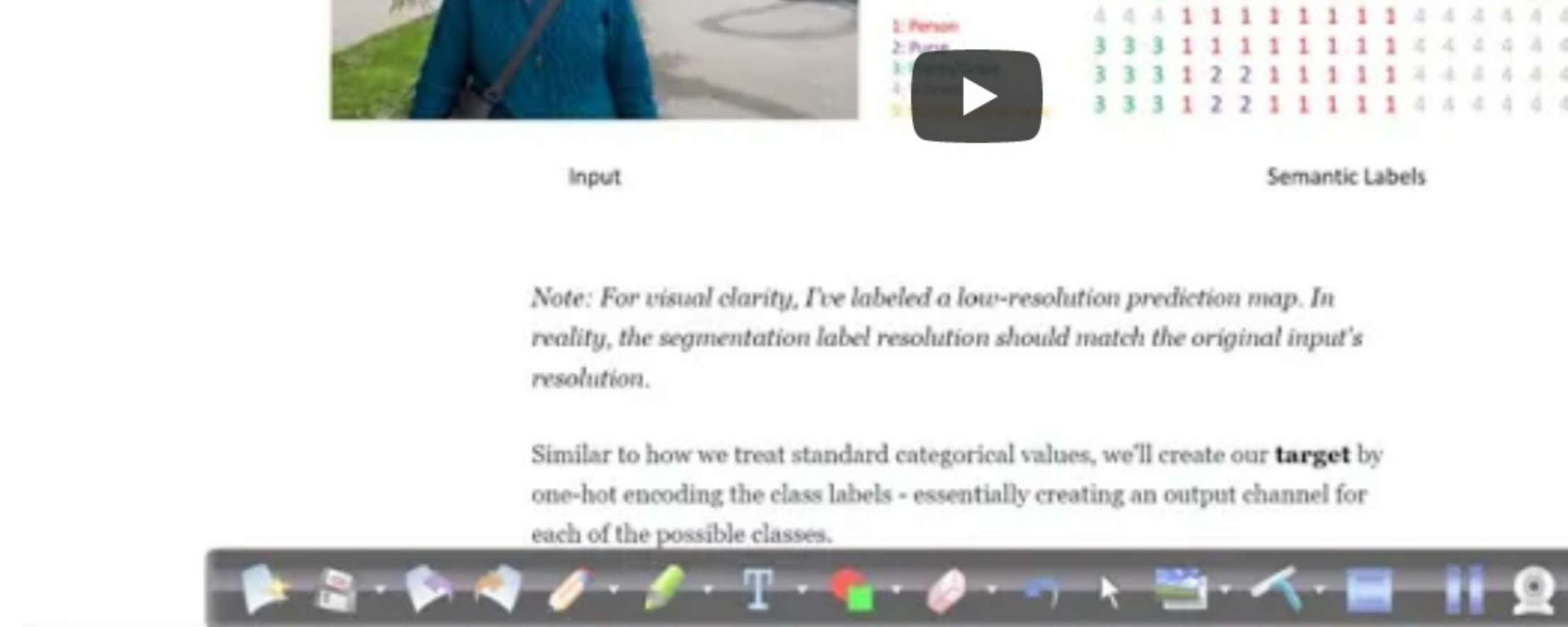
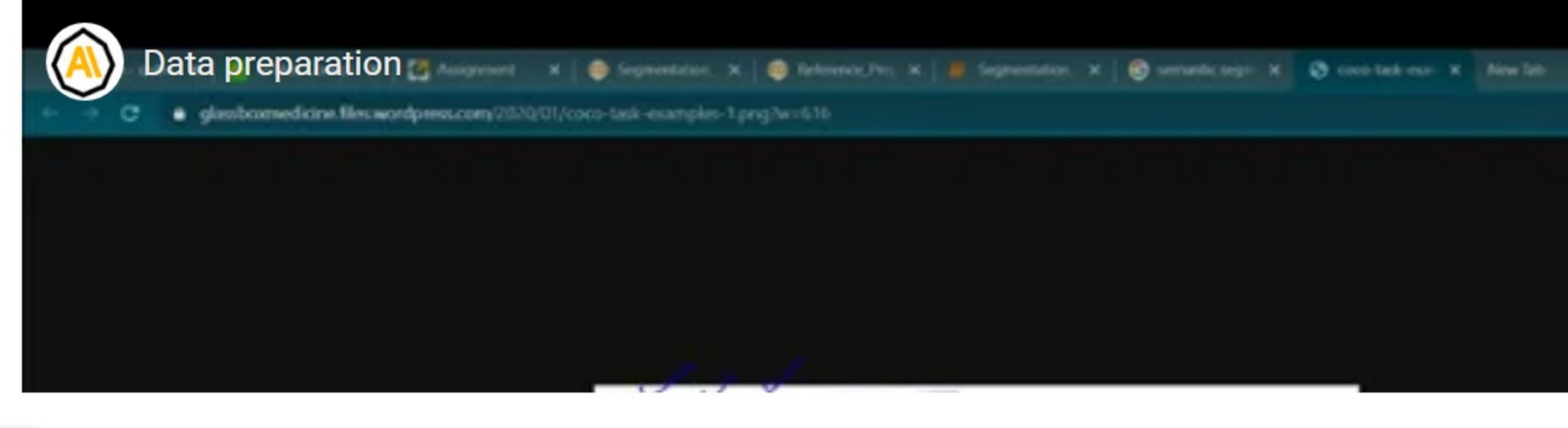
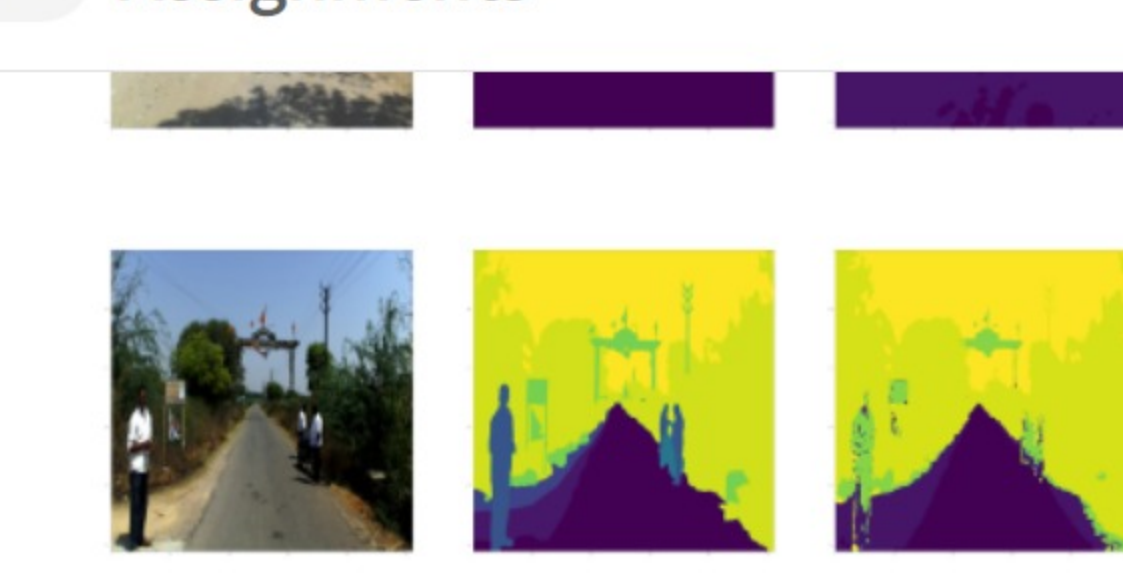
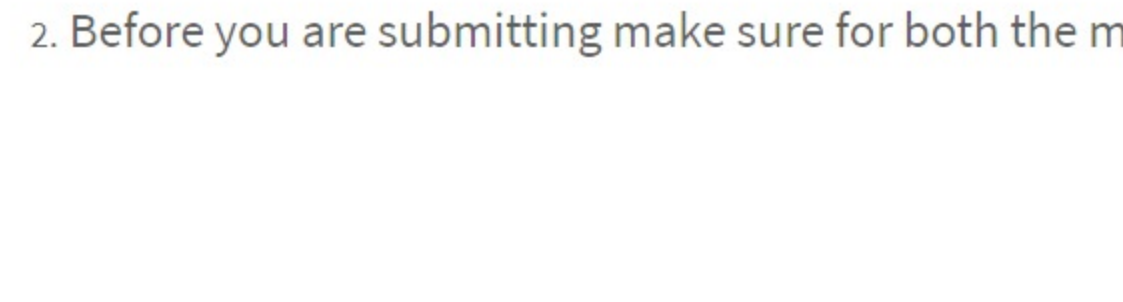


Computer Vision - Segmentation

Created By- Applied AI Course | Created on- May 16th 20 | Topic - Deep Learning Assignments

Please check the [google drive link](#) to download .ipynb files

1. We have given two notebooks
 1. **Segmentation_Assignment.ipynb**: we have given complete instructions on how to do the images, training with pretrained segmentation models, and writing a custom implementation of the architectures. Do read and understand each and every cell of this notebook,
 1. Note 1: we have given a paper in the same notebook, please do read that paper
 2. Note 2: The goal of this assignment is that "you should be able to implement a resnet from scratch" and work on computer vision problems.
 2. **Reference_Pretrained_Unet.ipynb**: this notebook is an end to end case study which will show you how to use pretrained segmentation models.
2. Before you are submitting make sure for both the models U-net and CANE, you need to plot images like



both the original and predicted masks should contain all classes polygons, plot minim of 10 test images .

3. there are few json files, which are having only on coordinate for a label, in that you can skip writing i.e im

4. For U-net try to get the validation IOU 0.5 +, and for Canet try to get 0.4 +

5. In the Fsm module, make sure you use global average pooling.

Model	Validation IOU
U-net	0.5 +
Canet	0.4 +

Tensorflow and keras versions

Please use tensorflow version **2.2.0** and keras version **2.3.1**

If you are using colab , please run below code in a new cell

```
!pip install tensorflow ==2.2.0
```

```
!pip install keras ==2.3.1
```

Hints:-

2. Before assigning the validation data
3. while reading the image use this code

```
image = cv2.imread(self.images_fps[i], cv2.IMREAD_UNCHANGED)
image = cv2.resize(image,(self.w,self.h),interpolation=cv2.INTER_AREA)
image = cv2.cvtColor(image, cv2.COLOR_BGR2RGB)
```
4. as the data is less try taking 0.1 to 0.15 % of the data as validation
5. Use ReLu activation function in the conv layers of CANET
5. you can download this video : <https://youtu.be/NVMWAMqT-Y> and then predict the masks for each frame (self driving car assignment), this is the example result of image segmentation



1. We will be updating video instructions on this soon if you have any confusions please drop an email at team@appliedaiaicourse.com.
2. please do read all the instructions and references before you attempt the assignment.

Note-1: Check this to see how to submit an assignment [AAIC Classroom](#)**Note-2:** If you have used code from somewhere, provide those references or citations. Else it will be considered as plagiarism.**Note-3:** Upload both python notebook and pdf version of that notebook.**Note-4:** For converting Jupyter notebook to PDF please have a look at this link: <https://stackoverflow.com/questions/47587487/how-to-convert-jupyter-notebooks-to-pdf-and-html>

Files(0)