CS 4476 PS5

Name
GT Email
GT ID

Part 1: Standard Scaler: Why did we use StandardScaler instead of looping over all the dataset twice for mean and standard deviation? Why a simple loop will not be a good choice in a deployed production grade ML system?

<text answer here>

Part 1: Why do we normalize our data (0 mean, unit standard deviation)?

Part 3: Loss function. Why did we need a loss function?

<text answer here>

Part 3: Explain the reasoning behind the loss function used

<text answer here>

Part 5: Training SimpleNet

<Loss plot here>   <Accuracy plot here>

Final training accuracy value:

Final validation accuracy value:

Part 6: Simple Segmentation Net

Class Index	Class name	Simple Segmentation Net Class IoU
0	Building	
1	Tree	
2	Sky	
3	Car	
4	SignSymbol	
5	Road	
6	Pedestrian	
7	Fence	
8	Column_Pole	
9	Sidewalk	
10	Bicyclist	

Validation mIoU:

Number of Epochs: _____

Part 6: Simple Segmentation Net

Paste a figure of the generated semantic segmentation from Colab. It should be a 2x3 grid, with ground truth on the top row, and your predictions on the bottom row.

Part 6: Simple Segmentation Net

Which classes have the lowest mIoU? Why might they be the most difficult? Provide an example RGB image from Camvid that illustrates your point.

Conclusion: briefly discuss what you have learned from this project.

<Text solution here>

EC1.1: Screenshot of your get_data_augmentation_transforms()

<Screenshot here if attempted; do not delete the slide if not attempted>

EC1: Training to solve overfitting

<Loss plot here>   <Accuracy plot here>

Final training accuracy value:

Final validation accuracy value:

EC2: PSPNet

Class Index	Class name	PSPNet Class IoU
0	Building	
1	Tree	
2	Sky	
3	Car	
4	SignSymbol	
5	Road	
6	Pedestrian	
7	Fence	
8	Column_Pole	
9	Sidewalk	
10	Bicyclist	

Validation mIoU:

Number of Epochs: _____

EC2: PSPNet

Paste a figure of the generated semantic segmentation from Colab. It should be a 2x3 grid, with ground truth on the top row, and your predictions on the bottom row.