

ASSIGNMENT 4

Submitted by: Navjot Kaur

CLASSIFICATION

Accuracy (in percentage)

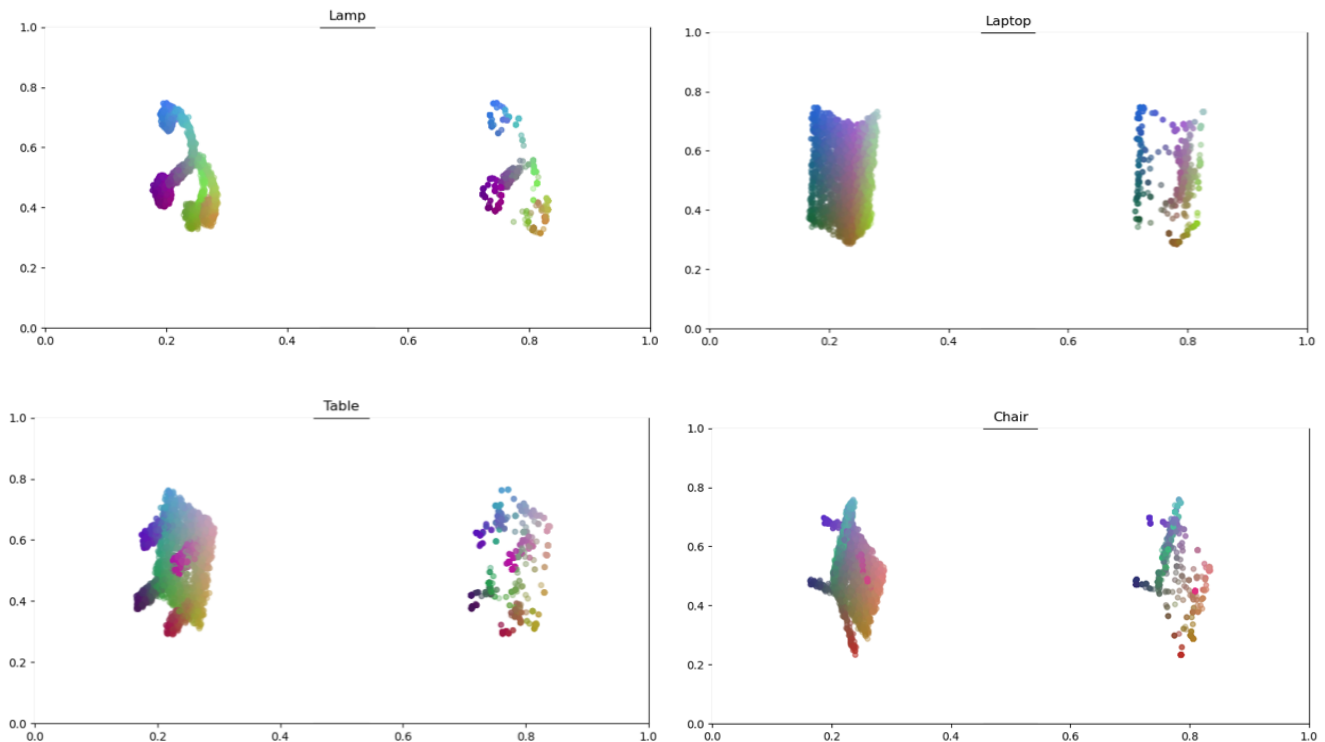
	With feature transform	Without feature transform
Train set	99.64	99.82
Test set	97.43	97.63

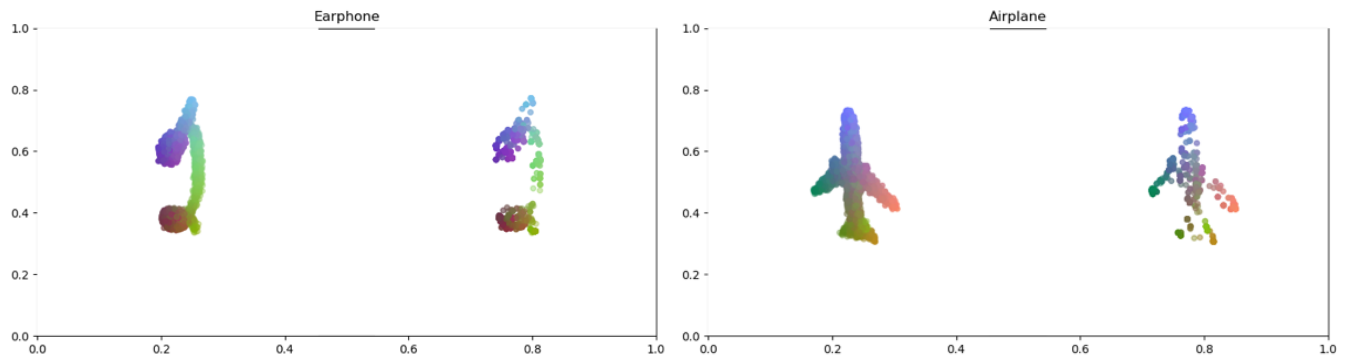
Per-class F1-scores for test set (with feature transform):

Airplane: 0.98	Earphone: 0.73	Motorbike: 0.94
Bag: 0.93	Guitar: 0.99	Mug: 0.91
Cap: 0.80	Knife: 0.96	Pistol: 0.98
Car: 0.97	Lamp: 0.94	Rocket: 0.76
Chair: 0.99	Laptop: 0.98	Skateboard: 0.95
		Table: 0.99

The best performing classes are Chair, Table and Guitar. The least performing classes are Earphone and Rocket.

Below are the figures for critical points:





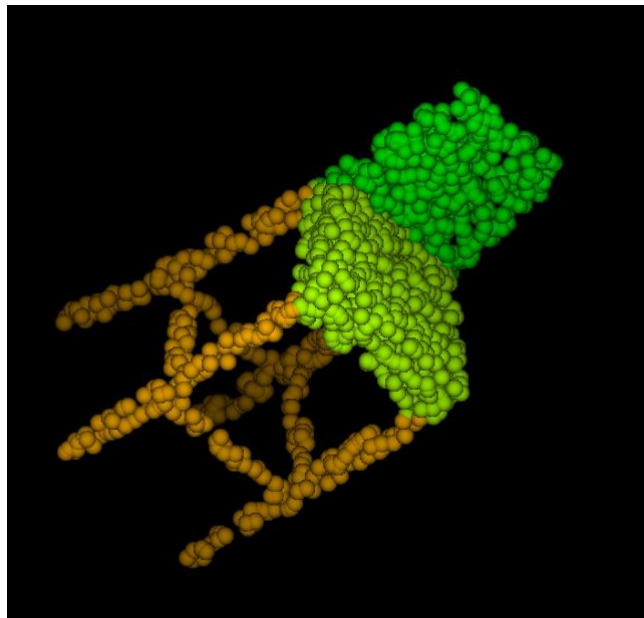
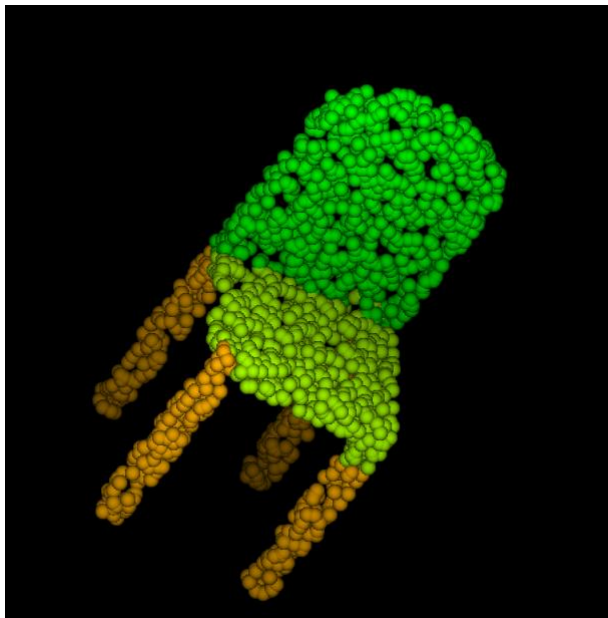
SEGMENTATION

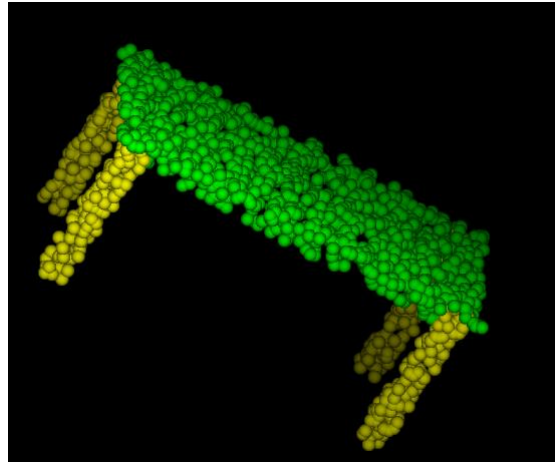
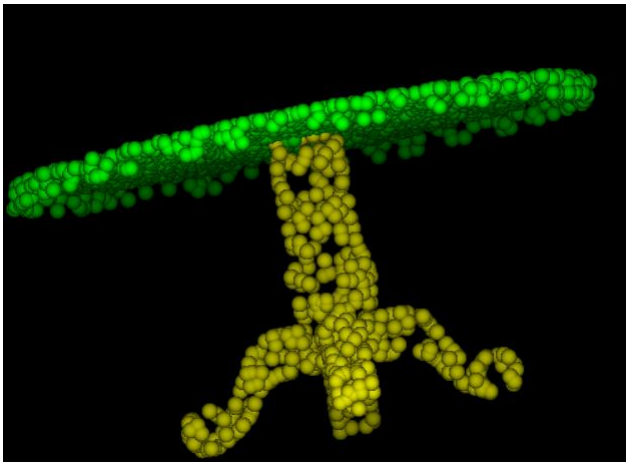
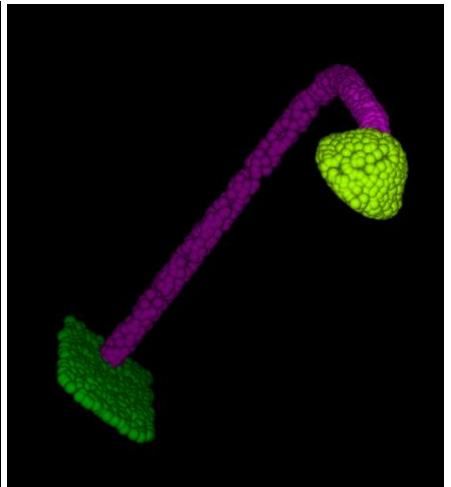
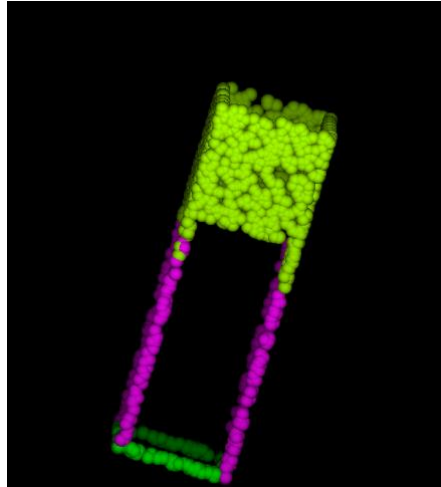
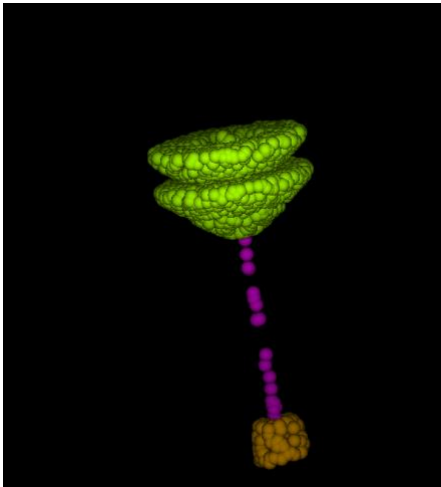
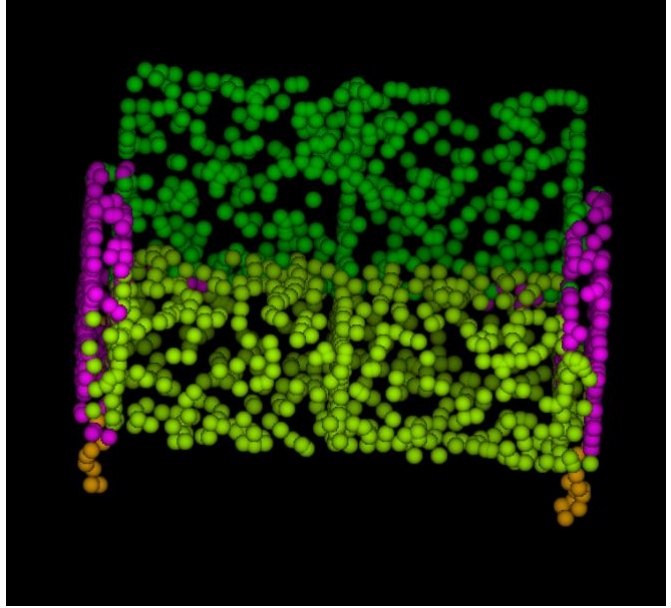
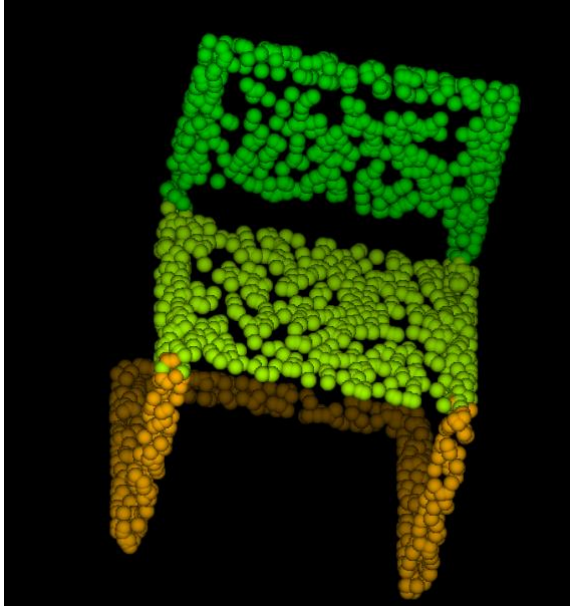
mIOU values for Class “Chair”:

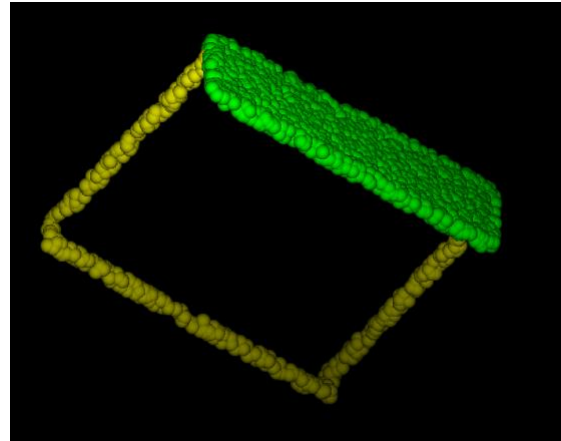
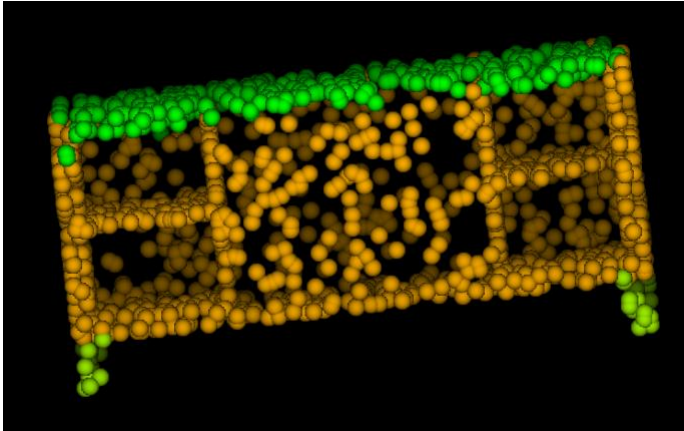
	With feature transform	Without feature transform
Train set	0.860	0.880
Test set	0.855	0.860

mIOU values for Class “Table”:

	With feature transform	Without feature transform
Train set	0.842	0.857
Test set	0.801	0.814







HYPERPARAMETERS:

Epochs: 100

Learning rate:

For classification: 0.001

For segmentation: 0.0001

Batch size: 32

Trained and tested on CSIL machine blu9402u-c08.

REPRODUCING RESULTS:

Please run *misc/test.sh* after unzipping the folder, to get the reported results.

1. Please update the *dataset* path in *misc/test.sh* if running on machine other than blu9402u-c08.
2. Critical points images are saved in *cls* with *batch_id* as name.
3. Weights:

Classification:

cls/weights_with_transform.pt

cls/weights_without_transform.pt

Segmentation Chair:

seg/weights_with_transform.pt

seg/weights_without_transform.pt

Segmentation Table:

seg/weights_with_transform_Table.pt

seg/weights_without_transform_Table.pt