CS498 AML,AMO HW4 Report

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TOTAL POINTS

75 / 75

QUESTION 1

1 Plot of Mean Images **10 / 10**

✓ **- 0 pts** Correct

- 10 pts Incorrect

- 5 pts Partially incorrect

- 10 pts 2 days late

- 15 pts 3 days late

- 20 pts 4 days late

- 25 pts 5 days late

- 30 pts 6+ days late

QUESTION 2

2 Plot Error vs. Class after 20-PCA **15 / 15**

✓ **- 0 pts** Correct

- 15 pts Incorrect

QUESTION 3

3 2-D Scatter Plot for Part B **25 / 25**

✓ **- 0 pts** Correct

- 0 pts Points are unlabelled

- 0 pts Points are labelled with class indices instead
of names

- 5 pts Scales are wrong indicating improper MDS

- 1 pts Labels are incorrect

- 5 pts Points are improperly separated

- 0 pts Click here to replace this description.

- 25 pts No submission

QUESTION 4

4 2-D scatter plot for Part C **25 / 25**

✓ **- 0 pts** Correct

- 0 pts Labels missing

- 0 pts Labels incorrect or labelled with class indices

- 5 pts Scale is wrong because MDS procedure was
incorrect or points are improperly separated
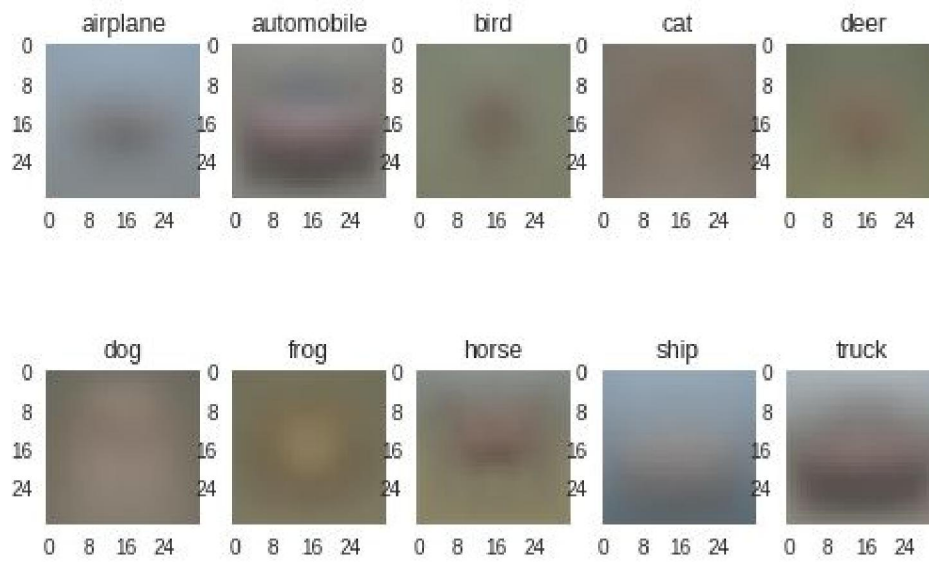
- 25 pts No Submission
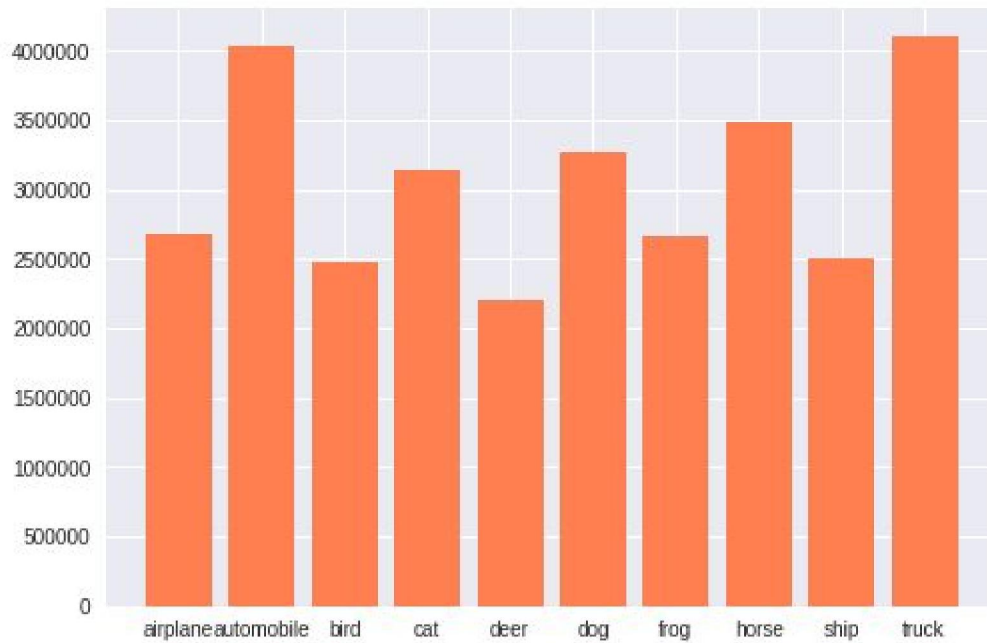
QUESTION 5

5 Late Submission **0 / 0**

✓ **- 0 pts** Correct

- 5 pts 1 day late

◧ gradescope

CS498 AML - HW4

1. Page 1: **(10 points)** A plot of the mean image for each class.

2. Page 2: **(15 points)** A plot of the average sum of squared pixel-wise difference between the reconstructed and original images of each class **as a bar graph** vs. the class label.

3. Page 3: **(25 points)** The 2D scatter plot obtained after performing principal coordinate analysis using euclidean distance.
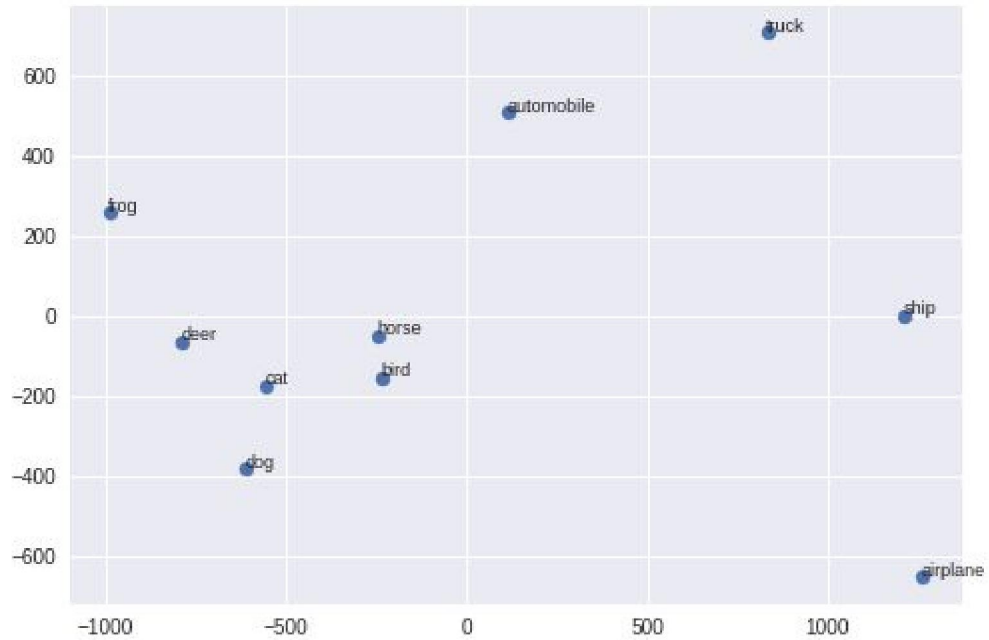
4. Page 4: **(25 points)** The 2D scatter plot obtained after performing principal coordinate analysis using the similarity metric in part C.
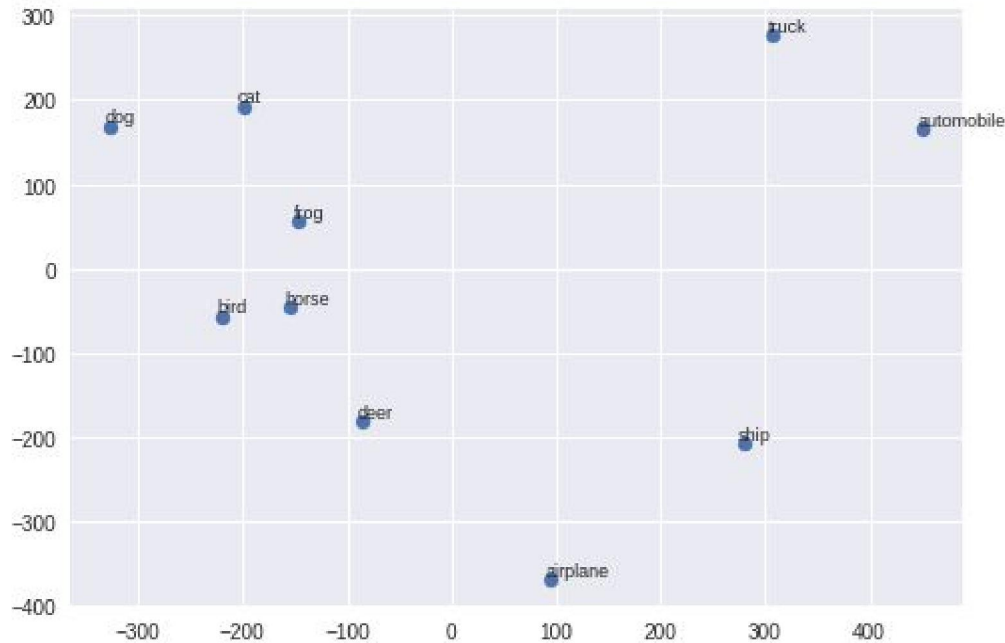
The result of this method slightly differs from Part B because the datasets used in Part C have been reduced from 3072 significant dimensions to only 20 significant dimensions while Part B uses full 3072 dimensions. The fact that Part B and C result in a very similar plot suggests that we do not lose a lot of detail by scaling down dimensions.