95891 HW3 Computer Vision

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***1. What is the accuracy of your model on the test data?***

I used transfer learning on Pytorch, and set ﻿number of epochs as 25. The best accuracy of my ﻿model is 74.3%

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***2. Provide a confusion matrix between the ground truth and predicted labels in the test dataset. The rows should correspond to the ground ruth categories and the columns to predicted categories. The confusion matrix here should have raw datapoint counts and should not be normalized as percentages.***

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***3. Now normalize the raw confusion matrix reported in the previous question by dividing each row by the sum of all its elements. Include this normalized confusion matrix in your report.***

A screenshot of a computer

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***﻿ 4. Which is the category that is most accurately predicted? Hint: Interpret the normalized confusion matrix.***

The prediction accuracy rates for each class are the diagonal numbers in the normalized confusion matrix. The accuracy is best when category = 7( ﻿ jewelleryshop ), the accuracy is 0.92982456.

***5. Which is the category that is least accurately predicted? Which other category is this least accurately predicted category most confused with in your predictions? Hint: Interpret the normalized confusion matrix.***

The prediction accuracy rates for each class are the diagonal numbers in the normalized confusion matrix. The accuracy is worst when category = 10 ( ﻿ subway ), the accuracy is ﻿0.59908884.

***6. For each category, calculate the precision and recall from the raw confusion matrix. Plot a grouped bar chart showing the precision and recall grouped by category.***

The precisions are ﻿[0.70352564, 0.7755102, 0.35714286, 0.57142857, 0.76086957, 0.06451613, 0.29943503, 0.84375, 0.84210526, 0.87959866]

The recalls are ﻿[0.86417323, 0.78350515, 0.90909091, 0.92307692, 0.60344828, 0.66666667 0.92982456, 0.81203008, 0.61985472, 0.59908884]

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Show the grouped bar chart

Chart, bar chart

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