

Review for Deep Learning Project 1 - Group 07

Qing Yang

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1 Summary of the Report

This report illustrates the feature extraction on MNIST dataset and Rapheal's paintings dataset by scattering net and pre-trained VGG19 accordingly. Then PCA, MDS, Manifold learning and t-SNE have been performed for visualizing those extracted features. Their results could be compared and discussed. Finally, SVM has been conducted to perform and to predict task on disputed paintings.

2 Strengths of the Report

- The project researches on both two suggested datasets, and several unsupervised learning methods have been introduced, used and compared;
- Features illustration is great to look at by coloring different category in different colors, with clearly stated labels;
- The report is well-organized, with introduction of either data or method used;

3 Weaknesses of the Report

- The figure of 'Diffusion Map' cannot be seen very well, it could be better to exclude the outliers first;
- Unsupervised Learning results of MNIST has not been included without explanation;
- I think the papers referring to have not been well cited and included in reference section (at least VGG19 paper should be included in reference)

4 Clarity and Quality of Writing(1-5): 5

The report is clearly written, and there are figures to illustrate the unsupervised learning results. Formatting and structure are great. The results have been discussed with examples. References are appropriate. I have no suggestion in this part.

5 Technical Quality(1-5):4

The techniques used in this report is sound and well-explained. Every item including data and method is introduced before use. There seems no flaws in reasoning and claims are supported by experiment results. The results are convincing as there is comparison between several unsupervised learning methods. Here are some suggestions:

- It could be better if there are more supervised learning methods so that we can compare and average out the final prediction for disputed paintings;

6 Overall Rating(1-5):4

7 Confidence on the assessment(1-3):3