

Title of Your EE543 Project Report

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....

Abstract— Summarize your whole study here. State the problem together with the names of the methods used, the dataset used, best results you obtained for these methods on this dataset. Typically an abstract is about 200-300 words. Your report should contain the parts explained in the main text of this document. Your report is expected to be about 5-6 pages for a single person. (You may add an extra page for each extra person in your group). Fitting a study into limited pages, requires a specific skill, so it may be slightly longer. Use 12 pts font in your report.

I. INTRODUCTION

Introduce the problem to be solved, and what you do as a solution. If necessary give a block scheme of your approach and its explanation. (For example for face detection: Are you using a sliding window, or finding first a region of interest etc., are you using the deep network/other methods for classification or regression etc.)

II. DATASET

A brief description of the dataset, some samples from the dataset, number of samples, their sizes, how it is separated to training and test set etc. Some datasets may have also validation set. Refer to related websites and papers.

III. METHODS

Mention the name of each method used and then give details for each of them as given in the following.

A. Name of the Method 1

Explain the methods chosen by referring to related sites and papers.

For the methods used, do not explain the theory but indicate which methods are used and the structure of the networks that you tested. Provide necessary figures in order to explain it. It may be necessary to change some hiper-parameters, such as number of layers, number of filters ect. in order to obtain a better performance. Then provide this kind of information in a table, but in the figure you may use a generic figure or a sample case.

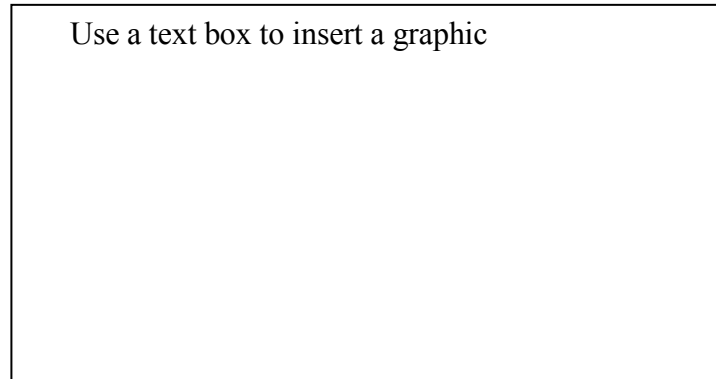


Figure 1. Example of a figure caption.

Table 1: An example table for explaining the layers in the networks

Network Name	Block Name	Layer Name	Number of kernels	Kernel Size	Stride	Number of neurons	Neuron Type
NW1	C1	Conv1	64	11	4		ReLU
		LRN1	-	5	-		
		Pool1	-	3	2		
	C2	Conv2	256	2	5		ReLU
		LRN2	-	5	-		
		Pool2	-	3	2		
	C3	Conv3	256	1	3		ReLU
	C4	Conv4	256	1	3		ReLU
	C5	Conv5	256	2	5		ReLU
		Pool5	-	3	2		
	FC	FC1		-	-	4096	ReLU
		FC2		-	-	4096	ReLU
		FC3		-	-	3	Linear
NW2						

1) Preprocessing

Explain the preprocessing step if it was necessary. The same preprocessing should be used for all the classifiers in order to be able to compare them. If you do not apply any preprocessing then mention it here.

2) Feature Extraction

Explain the feature extraction step if it was necessary. If feature extraction is not used explicitly for some of the methods then mention it here, and explain for example which part of the network is corresponding to feature extraction. If a feature extraction method that you explained previously for some other method, then refer to the related section. Clearly mention what is the size of your feature vector size and what is each component. If necessary give equations for extracting the features. For each equation give an equation number in parenthesis. Using right justify and tabs before equation number makes easier to format.

$$c = a + b \quad (1)$$

$$d = c * a \quad (2)$$

3) Classification

Explain the classification part. For example: After preprocessing and feature extraction steps SVM is used for classification.... Or : The fully connected layers of the CNN network takes input from ... and produces output .. which corresponds to ...

B. Method 2

Give necessary information as it is done for the Method 1

IV. PERFORMANCE CRITERIA

Explain what you are measuring and how it is calculated. Give formulas for calculating the performances.

V. EXPERIMENTAL RESULTS

It should be explained how the networks are initialized, how they are trained. Give the results you obtained, present them as tables, figures, etc.

VI. CONCLUSION

Conclude your study. What you have observed, why it is like that. what future work can be done. Although a conclusion may review the main points of the project, do not replicate the abstract as the conclusion. A conclusion might elaborate on the importance of the work or suggest applications and extensions.

VII. ACKNOWLEDGEMENTS

You may acknowledge here, if this study is related your thesis, who is supervisor, or you may mention your thanks etc.

REFERENCES

Give references to papers used.

- [1] G. O. Young, "Synthetic structure of industrial plastics (Book style with paper title and editor)," in *Plastics*, 2nd ed. vol. 3, J. Peters, Ed. New York: McGraw-Hill, 1964, pp. 15–64.
- [2] W.-K. Chen, *Linear Networks and Systems* (Book style). Belmont, CA: Wadsworth, 1993, pp. 123–135.
- [3] H. Poor, *An Introduction to Signal Detection and Estimation*. New York: Springer-Verlag, 1985, ch. 4.

RELATED LINKS

Links to data, software, etc. Write them separately for data, and each method.