

Assignment-1

The objective of this assignment is to implement and evaluate the effect of regularization in generalizing CNN for classification tasks on CIFAR-10 dataset.

Task-1 (handwritten): Design your own simple CNN architecture with at least 3 Conv layers and 2 FC layers. For each layer, calculate the number of weights, number of biases and the size of the associated feature maps. Show your calculations and finally summarize the values in the tabular form.

Layer	Activation map dimensions	Number of weights	Number of biases
Input			
Layer 1 (Conv-K-N)			
...			

Task-2 (experimentation):

1. Implement your designed CNN architecture. You are encouraged to use python for implementation.
2. Partition the data randomly into ~70% training set, ~20% validation set and ~10% test set (take samples in this ratio from each category).
3. Make use of any two regularization techniques learned in class and see if by using them you can improve the generalization of the model.
4. Compare and analyse the effect of both the techniques used and report your observations.

Submission:

1. For task-1, submit picture(s) of your handwritten document(s) (in folder "task-1").
2. For task-2, create a folder "task-2". Put your implementation(s) in a sub-folder "code", and your analysis in a pdf using the template "bmvc_final.tex".
3. Submit a single folder containing both these sub-folders.

Note:

There will be a severe penalty in case of plagiarism. Please refer to "Cheating Vs. Collaborating Guidelines" given at <https://courses.cs.washington.edu/courses/cse573/12sp/>.