Home Work (2) - Deep Learning

Teddy Lazebnik

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1 Submission

You must submit your Homework until the 2.4.2020, 23:59 pm [Israel time]. Include your full name and ID number. A work without full name and ID number won't be excepted. You must submit your home work with all the questions answered. The submitting is by email. Please submit your work as a single PDF file (with the texts, graphs, and calculation plots) and all the code files. The email address is: lazebnik.teddy@gmail.com. In case of reserve or illness, please send me an email in advance

2 Home Work

- implement in Python (without using Keras or TensorFlow) FcNN with 2 hidden layers. Use the "relu" activation for each hidden layer and the "softmax" for the output layer. Write a code to train, test, and inference the FcNN. Generate data with 3 or more classes and show the loss function over epoch graph.
- Repeat the first question, but this time use Keras (or TensorFlow).
- implement a function getting an RGB image as an input and returns a list of all the edges in the image. Show a working sample.
- implement a function getting an binary image and returns center of mass and size (in pixels) of all the shapes in the image. Show a working sample.
- implement a dropout layer and repeat the first question now with dropout layer after every hidden layer. Compare between the two loss-epoch graph.
- implement 1d, 2d, and 3d convolution in Python.
- implement a single convolution layer.