EECS 531 - Computer Vision - Assignment 3

In this exercise, you will need a package for training and configuring (deep) neural networks. The demonstration uses Keras, but other popular packages include: Tensor Flow, Torch, and numerous others. You should feel free to explore and try out features in different packages. Sometimes packages can be challenging to configure. Please use Canvas discussions to resolve technical issues *before* the group discussions, so that the time in group discussions can be focused on ideas and preliminary results.

Exercise: Configure your package and work through a simple demo using a network with one hidden layer and fully connected weights. This will be used as a baseline and should be as simple as possible. Construct a larger neural network and train it on the same dataset. Contrast the performance with the baseline network.

Important Dates

- Wed Mar 21 - Group discussions. Discussion summaries are due by midnight.
- Wed Mar 28 - Group presentations.
- Fri Mar 30 - Final notebooks are due before midnight. Submit all notebooks (or pdfs) to Canvas.
- Mon Apr 2 - Peer evaluations are due before noon.

Requirements

- You are required to use git to manage your code and notebook and make commits regularly to show your progress. You must make a submission of your code and notebooks to canvas before each group discussion, group presentations, and the final due date.
- Use one jupyter notebook (or latex-generated pdf file) per exercise.
- Each notebook should include all necessary text, math, code, and results for clearly explaining your work to others. In addition to submitting the notebooks (the .ipynb files) you should also submit the export of the notebook to a pdf file.
- If you are using a language that does not support jupyter, you must create a pdf notebooks using latex. Use separate pdfs for each notebook.
- After the discussion session, you should submit your feedback to others' work on canvas in their submission page.

Group Discussions. The goal of this discussion is for each member of the group to have a clear idea of how to approach all the exercises in the assignment. You are free to ask any questions and offer any help that helps toward completing the assignment. A good outcome would be for everyone to have gotten a good start on the first two exercises.

Group Presentations. Each member of the group will have 7-8 min to present their notebooks to the other members of the group. Group members should take notes on each presentation for peer review of the final submission (due the following Monday via Canvas). Students are expected to use the feedback from the group to improve their notebooks before final submission. An group selected moderator will ensure that everyone stays within the time limits and that feedback is constructive.

Peer Evaluations. Group members are responsible for evaluating each of the other group members on completeness, clarity and depth understanding, correctness, thoroughness, and creative exploration. As well as a brief summary. Criteria are scored on a scale of 0-3. Details are in the rubric.