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Assignment 03 (Due date: Apr. 2, 2023)

Neural Networks

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Convolutional Neural Network (CNN) with Keras

The purpose of the this assignment is to create a Convolutional Neural Networks (CNN) using Keras.

To begin this assignment download the Kamangar_03.zip and unzip it in your computer.

- Your code should be using **Keras**
- **DO NOT** alter/change the name of the function or the parameters of the function.
- You may introduce additional functions (helper functions) as needed. All the helper functions should be put in the same file with `train_cnn_keras()` function.
- The comments in the `train_cnn_keras()` function provide additional information that should help with your implementation.

Notes:

- The Assignment_03_tests.py file includes a very minimal set of unit tests for the CNN class module. Part of the assignment grade will be based on your code passing these tests (and some other unspecified tests)
- **You may modify the "`Assignment_03_tests.py`" to include more tests. You may also add additional tests to help you during development of your code.**
- **DO NOT submit the "`Assignment_03_tests.py`"** file when submitting your Assignment_03
- You may run these tests using the command: `py.test --verbose Assignment_03_tests.py`

Grading Criteria

- Your submitted function will be tested with multiple test units.
- Passing the tests - 80 points
- Qualitative Evaluation - 20 points (Grader may examine your code and subjectively award as many as 20 points.)

Submission Guidelines

- Modify the first four lines of the Python file according to the assignment submission guidelines.

```
# Your name (last name, first name)
# Your student ID (100x_xxx_xxx)
# Date of submission (yyyy_mm_dd)
# Assignment_nn_kk
```

- Change the name of the file according to the submission guidelines.
- Create a directory and name it according to the submission guidelines and include your file in that directory.
- Zip the directory and upload it to Canvas according to the submission guidelines.

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