University of Fribourg
Departement of Informatics

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Spring Semester 2019

Pattern Recognition

Exercise 2d - March 25, 2019

First Team Task (Permutated MNIST)

Deadline: April 8, 2019 (end of day)

In this exercise, you should apply the MLP (task 2b) and the CNN (task 2c) on the permutated MNIST dataset, which is provided on ILIAS.

We recommend you use the DeepDIVA framework, which is build on top of PyTorch.

Recommendation: Use a DeepDIVA implementation for task 2b (MLP) and task 2c (CNN).

DeepDIVA:

- homepage: https://diva-dia.github.io/DeepDIVAweb/index.html
- getting started: https://diva-dia.github.io/DeepDIVAweb/getting-started.html
- tutorial: https://diva-dia.github.io/DeepDIVAweb/articles.html
- code https://github.com/DIVA-DIA/DeepDIVA
- visualization: https://diva-dia.github.io/DeepDIVAweb/articles/visualize-results/

Scrambled MNIST

Use the provided training set (permutated MNIST) to train your MLP (from task 2b) and your CNN (from task 2c). Apply the both trained models to classify the test set (permutated MNIST). Compare the results with the results from the normal MNIST. Is there a difference from before? If yes, why? Try to explain what you observe with your own words and the reason of this happening.

Expected Output

- Access to your github so that we can inspect your code.
- Accuracy on the permutated MNIST compared with the results on the normal MNIST.
- Analysis of the results in your own words.