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SS 2018 Pattern Recognition

Exercise 2a - March 19, 2018

First Team Task (SVM)

Deadline: April 9, 2018 (end of day)

With this exercise we want you to build the foundation for your Pattern Recognition Framework. To do this you should still work on the MNIST dataset, with which you should be familiar by now. In this exercise you should aim to improve the recognition rate on the MNIST dataset using SVM.

Discuss a good architecture for your framework so that you can reuse software components in later exercises.

Reminder: As already discussed. From now on you are free to either implement algorithms on your own or use any kinds of libraries.

SVM

Use the provided training set to build your SVM. Apply the trained SVM to classify the test set. Investigate at least two different kernels and optimize the SVM parameters by means of cross-validation.

Expected Output

- Access to your github so that we can inspect your code.
- Average accuracy during cross-validation for all investigated kernels (e.g. linear and RBF) and all parameter values (e.g. C and γ).
- Accuracy on the test set with the optimized parameter values.