Assignment no. 6

Machine Learning:
Supervised Techniques
365.076 (1UE) WS 2017

Exercise 8 (30 points) Reconsider the sequence classification data set from Exercise 6. Try to construct a neural network classifier that classifies the one-hot encoded sequences in the best possible way. Make reasonable assumptions in terms of network architecture, loss function, activation function, and regularization. Use cross validation or a validation set to evaluate your results. You are free to choose the architecture, but the easiest choice for such data would be a fully connected feed-forward net (with an LSTM net being the more advanced choice). There is a *page on JKU Moodle* providing more information which software packages can/may be used.

Your final submission should include all your source code and a report documenting your model selection procedure and a summary of your results. Finally, train a model with your best parameters on the entire training set and predict the class for the sequences in the text file `Sequences_test_unlabeled.csv` and submit the predictions as a text file (one label $-1/1$ per line).

Data Analysis Contest: The three models performing best on an independent test set with 2,000 other sequences will be awarded 3 extra points.

Submission: electronically via Moodle:

`https://moodle.jku.at/jku2015/course/view.php?id=2634`

Please take the submission instructions into account! Deadline: Monday, February 12, 2018, 1:00pm.