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Content and purpose of this lab

The main focus of the lab is to more classification.

Save the code you are writing in this lab for future use. To pass the lab you need to solve/program the different bullet points and be able to explain your results. If you are not finished with the all the bullet points the remaining ones are a part of the required preparations for part 4 of the labs. The lab report in the end is an individual report, but you are allowed to work two and two with one exception all of you have to record your own sensor data.

Preparations

You need to finish part three of the lab and be able to show the result in the beginning of the lab.

Also you should have been able to run the classification example in the Jupyter Notebook I showed in the end of the chapter 10 lecture.

Preprocess the data

You have already done this in part 3.

Classification

You should use RNN as a classifier. Hyperparameters you can change for optimizing are:

- Neuron, SimpleRNN, LSTM, GRU

- Number of neurons in each layer

- Number of layers

- Dropout

As previously:

- Change the number of features for your classification. How does the performance change with the choice of the features?

- Performance is measured by accuracy and confusion matrix.

Train, Validate and Test

You should always divide the data in train/validation and test sets. Use crossvalidation for the training/validation. Also use 5 of the 6 recordings (for each class) for the train/validation and keep the last one for test. Also keep the mixed recordings for testing, compare the two test scenarios.