Pattern Recognition
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Final report

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Group Organization

Tasks

SVM

The SVM task was achieved by using the sklearn[1] library, which is very simple to use and provides a lot of examples for a better understanding.

In order to find the best parameter, we used a grid search approach with various parameters and display the heatmaps of the results for each tested kernel (see below).
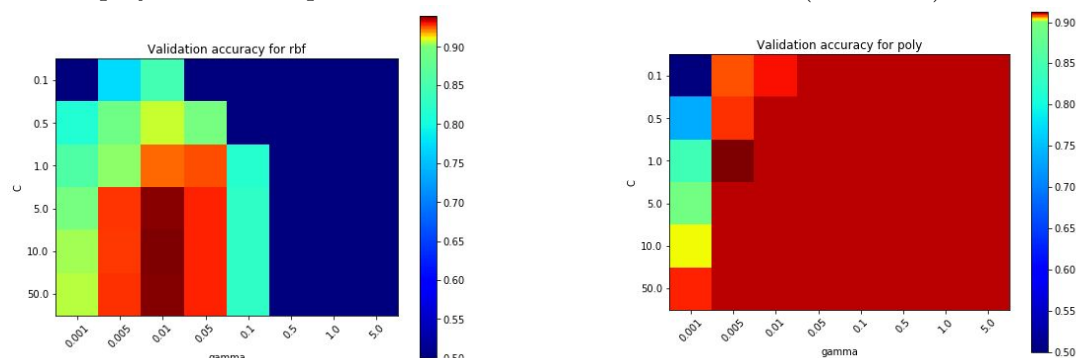

Using this, we were able to obtain a 97.9% accuracy.

MLP and CNN

The MLP and CNN tasks where both achieved by using the pytorch[2] library. We also performed a gridsearch like approach to find the best parameters for each of them.

For the MLP, we finally got a model with 512 hidden neuron and a learning rate of 0.001, other learning rate where not stable at all for this task.

We also go a learning rate of 0.001 for the CNN model since higher one (like 0.002 or 0.007) showed rollercoaster like curve :
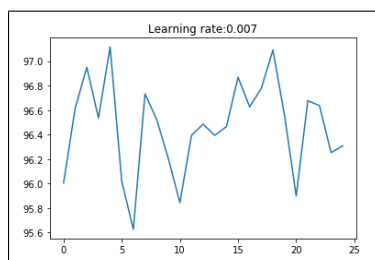
Finally, we achieved a accuracy of 97.0% for the MLP and 97.8% for the CNN.

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[1] https://scikit-learn.org/stable/modules/svm.html
[2] https://pytorch.org/

Keyword spotting

Signature Verification

General thoughts and feedback