# Session 7 project

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Group: 203

## 1 Excersise 1

SVM was used to find the boundaries between the different classes from the training set to later be used to classify the training set. The accuracy achieved with the training set is 97.92%, and the classification results can be further examined in the confusion matrix in figure 1.

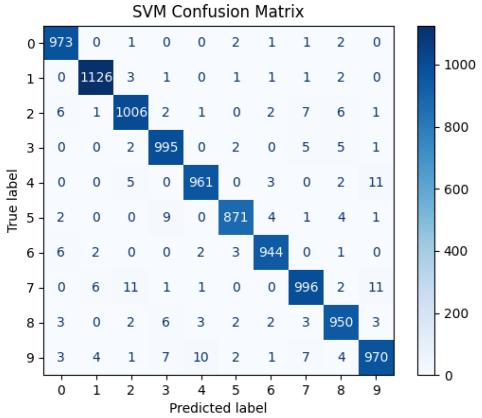


Figure 1: Confusion matrix SVM

Afterwards, SVM was applied to the dimensionally reduced datased either using PCA or LDA. The classification of the training set is achieved with an accuracy of 47.80% and 57.35% for PCA and LDA respectively. The confusion matrices of both classifications can be viewed in the following figures.

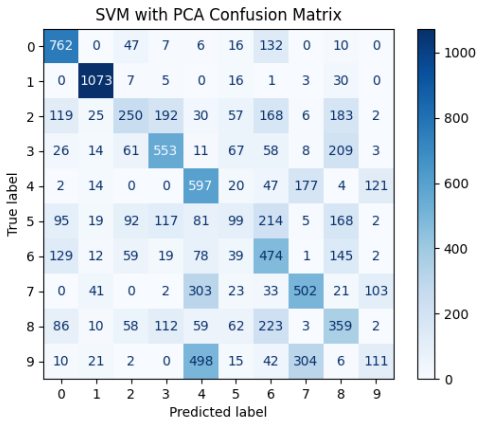


Figure 2: Confusion matrix SVM on dimensionally reduced data using PCA

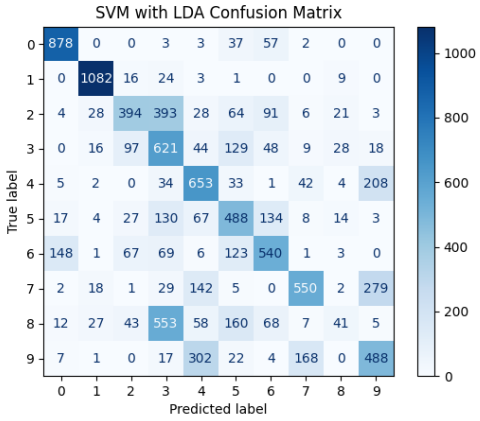


Figure 3: Confusion matrix SVM on dimensionally reduced data using LDA

## 2 Environment reproduction

To reproduce the environment used to build the excersise, follow these instructions:

```
python3 -m venv env
source env/bin/acivate
pip3 install numpy scikit-learn matplotlib
```

After the above steps the program can be executed by typing

```
python3 ‘ProgramName.py’
```