Pattern Recognition

Lab4:

Neural Network-based classifier

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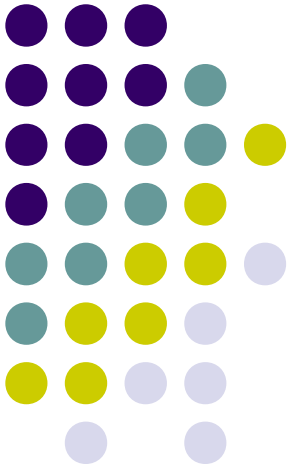
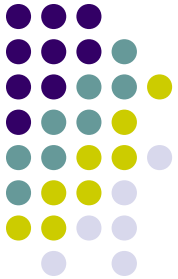


Lab 4.1

- Read the file ‘pima-indians-diabetes.data’
- Part the set into two equal subsets: assume one (PimaTr) as training set and the other one (PimaTest) as test set
- Starting from the training set, build a Neural Network-based classifier.
- Try:
  - Different number of hidden layers (0, 1, 2)
  - Normalization vs. non-normalization of inputs
  - Different learning rates and batch size
  - Dropout vs. non dropout

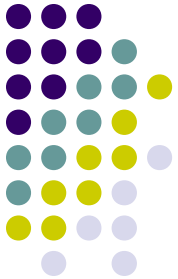
Lab 4.2



- Use the tool
  https://github.com/reiinakano/scikit-plot

  to plot the ROC curves evaluated on the different classifiers you built in the previous task

Reading Pima dataset



```
import numpy as np

# Read the data set
set = np.genfromtxt("pima-indians-diabetes.data",
delimiter = ",")

# Build the positive and negative subsets
setpos = np.copy(set[set[:,-1]>0,:])
setneg = np.copy(set[set[:,-1]==0,:])
```