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CO542

Neural Networks and Fuzzy Systems

2021

Lab 03 - Introduction to Perceptron

Exercise 3

Construct a single-layer perceptron to identify a subset (of your choice) of the students in the class (not this class!). Sample jpeg image files are in the folder "classpics" in 'feels'.
Install and use the scikit-image package in python to load and manipulate image data. Some useful functions are listed below.
• imread() (Hint: refer as gray parameter)
• imshow()
• rgb2gray()
• resize()
• rescale()

Here I have used two subsets BEARDED STUDENTS and NON-BEARDED STUDENTS. They are labeled as

- student has not a beard = 0
- student has a beard = 1

Train_set

I have labeled these training images as [1,1,1,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0]

```
F:\Engineering\Third year\Sixth semester\CO542\Lab\Lab3\Exercise3>python exercise3.py
Student has a beard
Student has a beard
Student has a beard
Student has not a beard
Student has not a beard
Student has not a beard
Student has not a beard
Student has not a beard
Student has not a beard
Student has not a beard
Student has not a beard
Student has not a beard
Student has not a beard
Student has not a beard
Student has not a beard
Student has not a beard
Student has not a beard
Student has not a beard
Student has not a beard
Student has not a beard
Student has not a beard
```

Test_set

Predictions

The prediction result of above students.

```
[1 0 0 0 0 0 0]
Student has a beard
Student has not a beard
Student has not a beard
Student has not a beard
Student has not a beard
Student has not a beard
Student has not a beard
```

Result

This model successfully identified a subset of the students.