Pattern Recognition

ECE 4363 / ECE 5363

Project 4

1. Use SVM to classify the given dataset of C. elegans worms into two classes: 1- worm (t=1), and 2- no worm (t=0).
2. Write a brief report that includes:
    a. Training information such as
        i. Visual verification of input data/labels
        ii. Any image preprocessing steps, including size/dimensionality reduction.
        iii. Parameters of SVM
        iv. Training, validation, and testing data splits
    b. Testing information presented as a confusion matrix and the classification accuracy
    c. Training and testing execution times
3. Your code must conform to the following format so that it can be tested on an independent dataset.
    a. Input:
        i. Name of the directory path containing test images
        ii. Trained model
    b. Output:
        i. Two-column list with the first column indicating the image filenames and the second column indicating the corresponding label: 1 (worm) or 0 (no worm)
        ii. Total number of images with labels 1 and 0
4. This is a group project. No more than two students are to form a group and make a single submission.

Archive

- **.m or .py file(s)**
- **report in pdf format**
- **trained model**

Name your file as Lastname1_Lastname2_Project4.zip and upload to Blackboard prior to the deadline.