Alexandria University
Faculty of Engineering
Computer and Comm Engineering Dept.
Fall 2015

CC484: Pattern Recognition and Applications
Assignment 1

Introduction to Feature Generation

One of the most important steps of pattern recognition is to generate features from data. Features should be discriminative characteristics for this data. In this assignment, the student is dealing with different types of data. The main task is to observe discriminative features of such data and to suggest features for specific recognition tasks.

Objectives

Upon completion of this assignment, you will be able to:
● Observe discriminative characteristics
● Generate discriminative features from datasets to perform specific recognition tasks.

Simple Decimal Digit Recognition

In a text recognition application, it is required to recognize individual decimal digits as a part of the text recognition process. In this part, you will be given a set of JPEG formatted images of some digits. Each image is of size 160 x 160 pixels. You may have more than one image for the same digit. You are required to:

1. Generate features that discriminate each digit category from the given image dataset.
2. Suggest defined steps to discriminate different categories.
3. Show empirically that these steps are able to discriminate digits.

Grading Policies

★ You should deliver a report that contains your work with any illustrating figures and/or comments.
★ Late submission is accepted after due date with 50% penalty.
★ You can work as groups of 3 (max).
★ get more training data (digits images). The more data you have, the more accurate your program will be.

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