Datasets descriptions

1 Letter Recognition Dataset

The objective is to identify each of a large number of black-and-white rectangular pixel displays as one of the 26 capital letters in the English alphabet.

The character images were based on 20 different fonts and each letter within these 20 fonts was randomly distorted to produce a file of 20,000 unique stimuli. Each stimulus was converted into 16 primitive numerical attributes (statistical moments and edge counts), via features extraction, which were then scaled to fit into a range of integer values from 0 through 15.

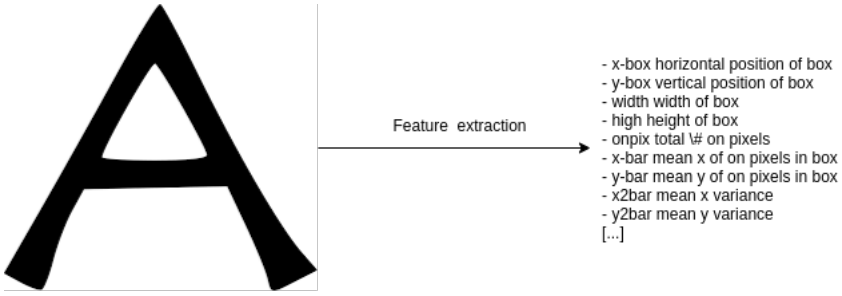

Figure 1: Feature extraction from the letter A which is typeset with a particular font.

Here is how examples in this dataset look like:

```
[...]
T,2,8,3,5,1,8,13,0,6,6,10,8,0,8,0,8
I,5,12,3,7,2,10,5,5,4,13,3,9,2,8,4,10
D,4,11,6,8,6,10,6,2,6,10,3,7,3,7,3,9
N,7,11,6,6,3,5,9,4,6,4,4,10,6,10,2,8
G,2,1,3,1,1,8,6,6,6,6,5,9,1,7,5,10
[...]
```

Number of Instances/examples: 20000

- `letter-recognition_train_*.txt` contains 16000 examples for training and validation.

- `letter-recognition_test.txt` contains 4000 examples for testing

Number of Attributes: 17 (Letter category and 16 numeric features)

Attribute Information:

- lettr capital letter (26 values from A to Z)
- x-box horizontal position of box (integer)
- y-box vertical position of box (integer)
- width width of box (integer)
- high height of box (integer)
- onpix total # on pixels (integer)
- x-bar mean x of on pixels in box (integer)
- y-bar mean y of on pixels in box (integer)
- x2bar mean x variance (integer)
- y2bar mean y variance (integer)
- xybar mean x y correlation (integer)
- x2ybr mean of x * x * y (integer)
- xy2br mean of x * y * y (integer)
- x-ege mean edge count left to right (integer)
- xegvy correlation of x-ege with y (integer)
- y-ege mean edge count bottom to top (integer)
- yegvx correlation of y-ege with x (integer)

Class Distribution:

```
789 A    766 B    736 C    805 D  768 E    775 F    773 G
734 H    755 I    747 J    739 K  761 L    792 M    783 N
753 O    803 P    783 Q    758 R  748 S    796 T    813 U
764 V    752 W    787 X    786 Y  734 Z
```