

Convex combination user's guide

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1 Introduction

This application is an implementation of a convex combination (CC) using the cross-entropy (CE) as loss function. The programs are written in C ANSI, and thus can be used under the various releases of UNIX, Linux, IRIX, etc.

2 Architecture of the software

This application is made up of two programs. `train_CC` performs the training of the combination, whereas `eval_CC` is used to test it. They can be compiled thanks to the commands:

`compile_train_CC` and `compile_eval_CC`
(the corresponding makefile is in the subdirectory `make`).

3 Combining classifiers

3.1 Simple examples

A simple way to become familiar with the use of the software consists in running it on the four benchmarks provided. In order to select any of them, it suffices to use the corresponding script, named `configure.name`, where `name` is the name of the data set as used in the directory `Data` (`cardio`, `CB513`, `image` and `waveform`). Once this is done, the files `Fichcom/train_CC.com` and `Fichcom/eval_CC.com` (see below) contain the appropriate parameters. Suffice it to use the commands `execute_train_CC` and `execute_eval_CC` to start training and evaluate the combination respectively.

3.2 Structure of the files containing the data

The files containing the data must be text files, with a specific structure. We illustrate this structure with the CB513 data set.

3.3 Training and testing the CC

Training is initiated with the command
`execute_train_CC`

In order to specify the nature of the problem to be solved, the file

```
Fichcom/train_CC.com
Testing is initiated with the command
execute_eval_CC
```

4 General comments

Please, feel free to report any suggestions you could have to improve the programs or this document to the following address: `Yann.Guermeur@cnrs.fr`.

Acknowledgments

References