

## Introduction to mixstore

Website gathering libraries which **model data as a mixture of probabilistic components**. The computed mixture can be used for various purposes

- density estimation
- clustering (unsupervised classification)
- (supervised) classification, . . .

*Main goal: increase visibility of packages.*

### Welcome page

### How it works ?

Registered users (*free process !*) can

- add/remove/edit packages
- add/remove/edit usecases (related to a pkg)

Visitors can browse the store for packages, and look at the reviews.

A package is defined by

- its name and description
- a list of authors and one contact email
- a programming language
- its potential dependencies
- an optional banner (also on welcome page)

A usecase is composed of

- its description
- an institution or company
- a contact email

*Each package referenced in the store is kindly asked to reference mixstore too !*

### User board

### MIXMOD — by Florent Langrogné & contributors

Software suite for model-based supervised and unsupervised classification of quantitative and/or qualitative data. Split into:

- a computational library (mixmod)
- a library to handle inputs/outputs (mixmod.IO)
- a R package (Rmixmod)
- a Graphical User Interface (mixmod.GUI)

*Pros:* (among others !)

- 14 + 8 different models (volume/orientation/shape)
- CEM, SEM and/or EM algorithms arbitrarily chained
- optimize parameters for 4 distinct criteria
- handle heterogeneous data (both quantitative and qualitative)

*Cons:*

- the source code has become difficult to maintain and/or extend
- (as a consequence) the development of mixmod.GUI has stopped

### Current mixmod.GUI

### New website/GUI ?

### Thoughts about MIXMOD future

UNIX/KIS/. . . — examples of what MIXMOD should not implement:

- a variable selection method
- a method to find the number of clusters
- functional data handling (. . .)

*However:* these could exist as MIXMOD (users community) extensions  
⇒ Rethink source code with extensions-based architecture in mind.

Also:

- turn mixmod.GUI into a web-based interface (server required ?)
- modernize website and allow to execute some sample code on it
- simplify packaging: distribute source only (. . .)

**Initial roadmap:** (should be a few weeks; then: iterate process)

- 1 develop a C++ minimal prototype from scratch + unit tests
- 2 mixmod.IO: drop QT dependency for libXml2, clarify files formats
- 3 design a basic but nice web interface for demos and tests