

COMPUTATIONAL STATISTICS AND DATA ANALYSIS

CALL FOR PAPERS

3rd Special Issue on

ADVANCES IN MIXTURE MODELS

<http://www.journals.elsevier.com/locate/csda>

We are inviting submissions for a special issue of Computational Statistics and Data Analysis dealing with Advances in Mixture Models.

Over the past few years, mixture models have reached an unprecedented level of popularity within the literature. This work is spread across theory, implementation, and application. Of late, mixture modelling approaches have been particularly popular for classification, in the broad sense, and analyses involving latent variables; however, their use is not limited to these fields. Other applications can be found in survival analysis, smoothing, and empirical Bayes, to mention but a few areas. Despite their growing popularity and the modelling flexibility that they offer, mixture models experience a number of difficulties. Parameter estimation is troublesome because the likelihood surface is notoriously uncooperative. Iterative parameter estimation is almost always required, with variants of the EM algorithm remaining the most popular approaches. That said, other approaches such as variational approximations are gaining traction. Determining the number of components and, more generally, model selection are also research directions of significant interest. Mixture models have been applied to data from a wide range of disciplines, including: food authenticity studies, medicine, the social sciences, nutrigenomics, and gene expression studies.

Key research areas in mixture modelling are:

- Parameter Estimation
- Hypothesis Testing
- Categorical Data Analysis
- Identifiability Problems
- Cluster-Weighted Models
- Model Selection
- Classification and Clustering
- Mixtures of (Generalized) Linear Models
- Bayesian Approaches
- Non-Gaussian Mixtures
- Mixtures of Profile Likelihoods
- Dimension Reduction

In order to be considered for publication the papers should have a computational or advanced data analytic component. Authors who are uncertain about the suitability of their papers should contact the editors. All submissions must contain original unpublished work that is not being considered for publication elsewhere. Submissions will be refereed according to standard procedures for Computational Statistics & Data Analysis. Information about the journal can be found at <http://www.journals.elsevier.com/locate/csda>.

The deadline for submissions is **30 April 2014**. However, papers can be submitted at any time and once they are received, they will enter the editorial system immediately.

Papers for the special issue should be submitted using the Elsevier Electronic Submission tool EES: <http://ees.elsevier.com/csda>. In the EES, please choose the special issue on *Advances in Mixture Models* and the Co-Editor responsible for special issues.

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