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The stochastic EM algorithm: Estimation and asymptotic results. (English) Zbl 0981.62022
Bernoulli 6, No. 3, 457-489 (2000).

Summary: The EM algorithm is a much used tool for maximum likelihood estimation in missing or incomplete data problems. However, calculating the conditional expectation required in the E-step of the algorithm may be infeasible, especially when this expectation is a large sum or a high-dimensional integral. Instead the expectation can be estimated by simulation. This is the common idea in the stochastic EM algorithm and the Monte Carlo EM algorithm.

In this paper some asymptotic results for the stochastic EM algorithm are given, and estimation based on this algorithm is discussed. In particular, asymptotic equivalence of certain simple estimators is shown, and a simulation experiment is carried out to investigate this equivalence in small and moderate samples. Furthermore, some implementation issues and the possibility of allowing unidentified parameters in the algorithm are discussed.

MSC:

[62F12](#) Asymptotic properties of parametric estimators
[65C60](#) Computational problems in statistics (MSC2010)

Cited in **1** Review
Cited in **22** Documents

Keywords:

[incomplete observations](#); [simulation](#); [stochastic EM algorithm](#)

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