

عنوان مقاله:

Implementation of EM algorithm based on non-precise observations

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خلاصه مقاله:

The EM algorithm is a powerful tool and generic useful device in a variety of problems for maximum likelihood estimation with incomplete data which usually appears in practice. Here, the term "incomplete" means a general state and in different situations it can mean different meanings, such as lost data, open source data, censored observations, etc. This paper introduces an application of the EM algorithm in which the meaning of "incomplete" data is non-precise or fuzzy observations. The proposed approach in this paper for estimating an unknown parameter in the parametric statistical model by maximizing the likelihood function based on fuzzy observations. Meanwhile, this article presents a case study in the electronics industry, which is an extension of a well-known example used in introductions to the EM algorithm and focuses on the applicability of the algorithm in a fuzzy environment. This paper can be useful for graduate students to understand the subject in fuzzy environment and moreover to use the EM algorithm in more complex examples.

کلمات کلیدی:

EM algorithm, exponential distribution, Fuzzy Statistics, Fuzzy data, maximum likelihood estimation

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