INFERENCE FOR HIDDEN MARKOV MODELS

by

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ABSTRACT

Bayesian inference techniques can be applied to hidden Markov models for drawing inference concerning many features of interest in the unobserved signal. By resampling from the posterior of the signal conditionally on the observation, optimal restoration can be performed and local measures of variability can be found. The restoration estimate is qualitatively different from those of Iterative conditional modes and simulated annealing. The restoration algorithm described here is optimal with respect to a local loss function and consequently has little known global characteristics. Specific problems of interest in image analysis are studied in simple examples.