1014-62-445 **Ingileif B. Hallgrmsdttir**, **R. Alexander Milowski** and **Josephine Yu***
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94709. *EM Algorithm for Hidden Markov Models.*

The Expectation Maximization (EM) algorithm is an iterative procedure used to obtain maximum likelihood estimates
for the parameters of statistical models which are induced by a hidden variable construct. The tree structure underlying
the hidden markov model (HMM) leads to an efficient implementation of the EM algorithm for HMM known as the
Baum-Welch algorithm. For several examples of two-state HMMs with binary output, we plot the likelihood function and
relate the paths taken by the EM algorithm to the gradient of the likelihood function. (Received September 16, 2005)