2011 BIOSTAT 615/815 Homework #7

Due is Thursday April 21th, 10:30AM, before the final exam.

Problem 1. Evaluation of Multi-dimensional Optimization Methods

Using the "ModelFittingData.txt" available at the class web page,

1. Select two of the multi-dimensional minimizers among E-M algorithm, Simulated Annealing, and Gibbs Sampling. Implement the methods in C++ and fit a mixture of one, two, and three normal distributions to the data.

2. Compare the relative performance of the two minimizers you selected. Compare the difficulty of the implementation, the final solution, and the computational burden for each method. Also, briefly describe the rationale of selecting configurable parameters of each method.

3. (Extra points - 10%) Implement all three algorithms above and make full comparisons between all three algorithms.

E-mail the source code of your implementation to the instructor, and turn in the printed hard copy of the sourc code with the results and answers.