

## Bayesian Data Analysis Problem Set 4

1. Number 3 on page 310. Implement and use the convergence diagnostics described in section 11.6.
2. Download the data [www.math.umass.edu/~jstauden/ps4data.txt](http://www.math.umass.edu/~jstauden/ps4data.txt) Our goal is to estimate the mean and the variance of the data and give intervals for both.
  - (a) Assume a normal model. Estimate the mean and variance and give 95% intervals for the mean and log variance.
  - (b) Assume a student-t model with several different degrees of freedom. Estimate  $\mu$  and  $\sigma^2$  and give 95% intervals for  $\mu$  and  $\log(\sigma^2)$ . What's the relationship between the estimates and the degrees of freedom.
  - (c) Which model do you prefer and why?