

BIOS 7717

Homework Assignment 1

1. On our course webpage you will find a file called `HongKong.rData`. This file contains an R data frame comprising exactly two columns, `high` and `day`. The first variable is binary; a 0 denotes a low number (< 300) of hospital admissions for circulatory and/or respiratory problems in Hong Kong on the given day, a 1 denotes a high number (> 300) of admissions. The second variable indexes the 730 days in 1994–1995.

Use R and JAGS to analyze the Hong Kong data. Do two analyses, one using the logit link and one using the cauchit link. Use the same vague spherical Gaussian prior for the regression coefficients $\boldsymbol{\beta}$ in both analyses. Include an intercept term as well as terms for `day`, `day2`, `day3`, and `day4` (so that $\boldsymbol{\beta} = (\beta_0, \beta_1, \beta_2, \beta_3, \beta_4)'$).