

Bayesian Statistics- Assignment

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Introduction

1

Think about and specify prior distribution for Parameters

With no concrete previous information about the effect of variable or a combination for predicting the price of house. I will use non-informative(uninformative) priors for the regression coefficients of the regressors(predictors) in the dataset(house). Thus, the assumption to be respected is that the predictors are normally distributed.

2&3

Gibbs Sampler

The very first step is to define conditional posterior for each of the parameters, then the assumption is, that the regressors are normally distributed, thus they follow a the distribution, while the residual variance is following inverse gamma. Shape and scale(rate) are α_0 and β_0 respectively, hyperparameters for priors of regressors are μ_{XX} and τ_{XX} , where XX represents the parameter i.e., 00,11, 22,33,44. So, I will program the functions of each parameter(they are identical) and then these will be incorporated into the gibbs sampler as i will be raising up the question.

The conditional posteriors