



Exploring Bayesian Estimation (Version 1.1)

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1. Choose a prior distribution

Distributions

- Normal
- Uniform
- Truncated Normal

Mean

Variance

2a. Upload your data

Please submit data in .csv format with only one column of data and the variable name as the header.

Upload

Browse... No file selected

2b. Generate your data

By specifying the parameters below, you can generate data from a truncated normal distribution.

Mean

Variance

Lower bound

Higher bound

Sample Size

Generate Data

3. Find your posterior!

By clicking the button below, you run the model to find the posterior mean of your data with your uploaded data and chosen prior distribution. If you change your data or prior, and you want to see its effect, just rerun the model by clicking the button again!

Run the model

User Interface

```
fluidRow(
  column(4,
    h2("1. Choose a prior distribution"),
    br(),
    radioButtons(inputId = "prior", label = "Distributions",
      choices = list("Normal" = "rnorm", "uniform" = "runif",
        "Truncated Normal" = "trnorm")),
    conditionalPanel(
      condition = "input.prior == 'rnorm'",
      numericInput("mean", label = "Mean", value = 100),
      numericInput("sd", label = "Variance", value = 10)
    ),
    conditionalPanel(
      condition = "input.prior == 'runif'",
      numericInput("min", label = "Minimum", value = 0),
      numericInput("max", label = "Maximum", value = 150)
    ),
    conditionalPanel(
      condition = "input.prior == 'trnorm'",
      numericInput("meant", label = "Mean", value = 100),
      numericInput("sd", label = "Variance", value = 10),
      numericInput("lbound", label = "Lower bound", value = 0),
      numericInput("ubound", label = "Higher bound", value = 150)
    )
  )
)
```

Server Side

```
posterior <- eventReactive(input$run, {
  if (is.null(data())){
    y <- gendata()
  } else{ y <- data() }
  if (input$prior == "rnorm") {
    model_string <- paste("model{
      for(i in 1:length(y)) {
        y[i] ~ dnorm(mu, tau)
      }
      mu ~ dnorm(" , input$mean, ", 1/" , sqrt(input$sd),"^2)
      sigma ~ dlnorm(0, 0.0625)
      tau <- 1 / pow(sigma, 2)}" , sep="")
    model <- jags.model(textConnection(model_string), data = list(y = y), n.chains = 1, n.adapt= 1000)
    update(model, 1000);
    mcmc_samples <- coda.samples(model, variable.names=c("mu"), n.iter=2000)
    unlist(mcmc_samples)
  }
  else if (input$prior == "runif") {
```



Distributions

